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OCTOBER 2015

GoldenEar's New "World Beating Triton Five"

— Mark Fleischmann, *Sound & Vision*

"Striking ... For anyone considering a loudspeaker under \$10,000, the (\$2000 pr.) Triton Five isn't just an option. It is a must audition" — Jacob Heilbrunn, *The Absolute Sound*



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"... delivering the kind of musical bliss some pay upwards of \$10,000 for" — Caleb Denison, *Digital Trends*

In keeping with GoldenEar's tradition, the Five's auspicious debut at the 2015 CES Show had a jaw dropping effect on the world's audio press. Sound&Vision's Rob Sabin wrote that the Fives were, "spectacularly open and transparent with wide deep sound staging" and "nearly brought me to tears thanks to the tremendous detail the Fives rendered on a Buddy Holly recording". Stereophile's Herb Reichert wrote, "These loudspeakers disappeared better than any I have ever heard" and then added, "While the music was playing I swear I could see nymphs and goddesses dancing around the soundstage". Normally outspoken writers like Sound&Vision's Darryl Wilkinson said, "I am running out of superlatives", and HD Living's Dennis Burger raved, "Quite frankly stupefying ... bowled away doesn't scratch the surface".

"The value for the money here is clear off the charts" — Chris Martens, *HiFi+*

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"Best Sound for the Money at CES 2015" — Robert Harley and Neil Gader, *The Absolute Sound*

The Triton Five is already adding illustrious new awards to GoldenEar's impressive collection. Although many focus on value for the money, some writers, like Sound Advice's Don Lindich, go further, giving them "Best Sound at the CES Show" and writing, "this is a cost-no-object preference for me". HD Guru's Gary Merson gave them "Top Pick Speaker at CES" and wrote, "They blew us away ... breaks new ground, outperforming competitors costing thousands more". SoundStage's Doug Schneider awarded a "Best System" honor. You owe it to yourself to visit your nearest GoldenEar dealer today!

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AS WE SEE IT

BY STEVE GUTTENBERG

THIS ISSUE: A new generation of music lovers is discovering high-end audio.

The Next Wave

I began working as a salesman of high-end audio gear in 1978. I was 29, and, as I recall, a healthy percentage of my customers were about my age. Most of the top high-end designers and entrepreneurs, too, were young: John Curl, Dan D'Agostino, Jon Dahlquist, Ray Kimber, Mark Levinson, Bill Low, Mike Moffat, Nelson Pass, Peter Snell, Bob Stuart, Jim Thiel, Ivor Tiefenbrun, A.J. van den Hul, Richard Vandersteen, Harry Weisfeld, David Wilson. The fact is, high-end audio's Golden Age—the late 1970s to the mid-1980s—was largely fueled by the under-40 set, and most high-end journalists were fellow baby boomers. Now we're all oldsters, with just a smattering of under-fortysomethings. That's about to change.

Strangely enough, it's vinyl's ongoing surge that's keeping hope alive. Vinyl isn't just for diehard audiophiles buying their umpteenth remastering of Muddy Waters's *Folk Singer*. No, it's thirtysomething hipsters scooping up old and new sides to play on their *home* hi-fis—while their peers and their parents' generation do virtually all of their listening on the go. Sure, the latter might do a smidgen of background listening at home with a cheesy Bluetooth speaker or sound bar, but through a *stereo*? No way: The only people kicking back at home spinning tunes are hipsters, audiophiles, and other misfits.

But their numbers are growing.

I'm fascinated by newly minted converts to vinyl. These refugees from the world of mobile digital sound have now discovered that music is best savored at home—and that has changed their perspective. I've seen it happen again and again with my under-35 coworkers: Once they've taken the plunge and bought a turntable, they're goners. It's strange—they grew up with the effortless discovery of new music at their fingertips, but now they're out there, chasing down gems in record stores and at yard sales. They're hungry for new sounds.

Something in the air

If, 10 years ago, you'd asked me where the next generation of audiophiles would come from, I'd have shrugged my shoulders. Back then, you rarely saw people under 40 at audio shows or in hi-fi shops, and most of my audiophile pals' adult kids had zero interest in the good stuff: Their hi-fis fit in their pockets.

That was then. Today's new vinylphiles are picking up turntable-tonarm combinations from Audio-Technica, Music Hall, Pro-Ject, Rega Research, and U-Turn. Record-player sales rise year after year—and not because kids are scoring old copies of *Kind of Blue* or *200 Motels* at thrift shops. What's really fueling turntable sales are young bands' new LPs: While bands eke out their livings with micropayment “income” from their music being streamed by Apple Music, Pandora, Spotify, and Tidal, they make a couple of whole dollars from *each* sale of an LP. Buyers of new LPs directly support their favorite bands' recording efforts, and fans gain a greater understanding that the music is valuable

and worth paying for. That's huge!

These recent converts to vinyl are more turned on by music than they were when they just listened to files, or had access to millions of tunes via a subscription to a streaming service. They might own just a few hundred LPs, but they're fully engaged with that music. So even with pressing plants worldwide cranking out LPs at breakneck speed, record labels have no choice but to endure waits of three to four months to generate product. No wonder Chad Kassem of Acoustic Sounds, owner of Quality Record Pressings, recently bought 13 more vintage vinyl stampers to help meet burgeoning demand.¹

Then there's the ongoing boom in headphones. The masses may be satisfied with earbuds, or with Beats or Bose headphones, but sales of audiophile headphones are growing by leaps and bounds, and custom-molded in-ear 'phones are selling briskly to twenty-, thirty-, and fortysomethings. Hardcore head cases are gobbling up hi-rez players from Astell&Kern, Cowon, FiiO, Hifiman, Pono Music, and Sony. And new generations of planar-magnetic and electrostatic models from Audeze, Enigma, Fostex, Hifiman, Kingsound, Oppo, and Stax are rapidly advancing the state of the headphone art.

These buyers of high-end headphones are the next wave of audiophiles. Meanwhile, the old guys are just now starting to see how far headphones have come since the Grados and Sennheisers of 10–15 years ago. At last year's Rocky Mountain Audio Fest, I spotted George Cardas cruising the ballroom dedicated to Head-Fi's CanJam event, wherein dozens of headphone suppliers showcased their wares. Cardas may be an old-guard cable manufacturer, but he now sees headphones as crucial to the future of the High End. Like me, he was excited by the vibe in that room.

New York City high-end retailer Stereo Exchange spotted the trend, and now devotes an entire room of their Broadway store to demonstrating upscale headphones and headphone amplifiers—and that led to a sales boom. Apparently, things have gone so well that the front of the shop is now lined with headphone listening stations; most of the buyers are under 40, and seem eager to step up to better headphones to get more out of their music.

History repeats: In coming decades, the “kids” will start to look and act more and more like us oldsters, and they'll have full-fledged hi-fi systems—even if they don't look exactly like *our* hi-fi systems. And they'll probably reminisce about the days when high-end audio first rocked their world. I can imagine a couple of 50-year-old audiophiles in 2035, enthusing over a pair of vintage Audeze LCD 3 headphones: “I used to have a pair of those—they were amazing!”

From my perspective, right now, high-end audio is just getting its second wind. ■

Steve Guttenberg writes *The Audiophiliac blog* for CNET.com.

¹ See www.stereophile.com/content/acoustic-sounds-major-vinyl-expansion.



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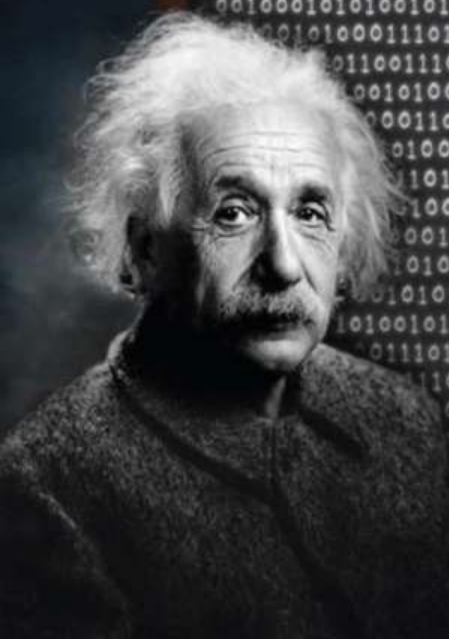
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Robert Harley **the absolute sound** - July/Aug '15 - issue 254

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LETTERS

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TAKE HEED! Unless marked otherwise, all letters to the magazine and its writers are assumed to be for possible publication. In the spirit of vigorous debate implied by the First Amendment, and unless we are requested not to, we publish correspondents' e-mail addresses.

Stan Ricker has passed away

Editor:

Truly sad news, as Stan was a beloved friend and former work colleague at Mobile Fidelity Sound Lab. According to his wife, Moni, Stan passed away on July 14, 2015, at 2:30am due to an infarct stroke.

—Bob Henry
highendaudiophile@gmail.com

I, too, was saddened to hear of the death of Stan Ricker, who was just shy of his 80th birthday. I first interviewed Stan for Hi-Fi News magazine in 1980, when Stan was cutting Mobile Fidelity's half-speed-mastered LPs and had engineered my favorite recording of the Ravel String Quartet in 1979, with the Sequoia Quartet for Delos. In 1996, Stan cut the master for Robert Silverman's Sonata: Piano Works by Franz Liszt (LP, Stereophile STPH008-1; www.stereophile.com/features/172/index.html). Michael Fremer wrote an appreciation of Stan for our sister website, AnalogPlanet.com: www.analogplanet.com/content/rip-legendary-mastering-engineer-stan-ricker.—John Atkinson

What's an audiophile, part 635

Editor:

I agree with Jason Victor Serinus (August 2015, p.3). If I spend money just to hear a never-before-heard breath before a note, a longer decay of a chord, or some other nuance that gives me insight into what the artist meant or felt, it's worth every penny (or, in most cases, many, many hard-earned dollars). I love music. And I love the gear that brings that music to me.

—Jay Jackson
jhjorlando@gmail.com

I am an audiophile

Editor

I have an opinion of what an audiophile is different from that of Jason Victor Serinus, who wrote about it in the August "As We See It." Mr. Serinus believes that "music is primary." On the other hand, I believe it's the *sound* of the music that most audiophiles obsess over. There's no argument that music is the driving force behind acquiring the means to reproduce it satisfactorily, but Mr. Serinus's friend Mr. Horn's description of "a sensitivity to nuance, and a desire to hear everything that artists put into their music" is, to me, the definition of focusing on the *sound* of the music.

Steve Guttenberg's definition of an audiophile—"a person who frets over their system, agonizes over choices, loves gear, and sometimes music..."—seemed spot on.

Steve Guttenberg's definition of an audiophile—"a person who frets over their system, agonizes over choices, loves gear, and sometimes music. . ."—seemed spot on and in agreement with mine. Later in the column, JVS supports his position by limiting gear experimentation in favor of listening. A letter writer in that same issue (Bill Seabrook) wrote about his obsession with the music and his love of listening to it on his vintage system while spending the savings not on more gear, but on more music.

—Carl Richard
Enfield, CT
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I'm not an audiophile any more

Editor:

I feel I must tender my resignation as an audiophile. My résumé has degraded, as I have passed on all the popular "new science" tweaks over the years. I still use homebuilt interconnects, \$2/foot speaker wire, and cheap power cords. Now I have taken the final step over the edge and succumbed to the siren song of multi-channel audio. I built up a pretty respectable two-channel system over the last decade or so. Everything but my tubed preamp has been listed in *Stereophile's* Recommended Components at one time or another, usually in Class B. It was a nice system, and I was very happy with it.

I never even sniffed at home-theater stuff because I thought I would have to spend a mint to equal the sound quality of my stereo. I put together an inexpensive 5.1-channel system for kids' movie nights at my local church, using mostly

used eBay stuff. It sounded pretty cool, so I got the itch to have one in my house for the occasional movie night at home. A popular online audio store was running a special on PSB Imagine Mini speakers (they still are) where they throw in the center-channel speaker for free. I got that, a refurbished midline Marantz home-theater receiver from another popular site that specializes in refurbished gear, and a JBL 12" subwoofer direct from them. I mounted the Minis on PSB brackets on the back wall, and set the whole thing up using the preamp outs on the Marantz to feed my stereo amp. I figured I would use it for movies and TV, and keep my two-channel system for "serious" listening.

I don't know if it is because of the Audyssey room correction, the more enveloping soundfield, or both, but my system sounds better than ever. Using the receiver to power only the center and surrounds gives it gobs of headroom, and crossing my Stratus Gold I speakers to the sub at 50Hz means the Stratuses aren't being stressed much either.

In the three months since I set this up, the two-channel preamp has been on for about four hours. I just sold it. I have even committed the mortal audio sin of letting my receiver chop up the signal from my Scout/Rondo Blue LP player into little digital bits, apply room correction and dynamic EQ, and create artificial surround with Dolby PLII, before sending it out to my amp and speakers. Some LPs sound better in a more direct mode, but others sound better treated this way. Some rather thin-sounding records from the 1980s are transformed. This is supposed to be about enjoying the music. I have a 24-bit/96kHz file of Diana Krall's *Live in Paris*. Played in Dolby PLII surround, it is simply stunning.

Too many audio nuts obsess over playing music "as the artist intended." Well, in most cases, those artists are the mixing and mastering engineers, and unless you have the same pro-audio

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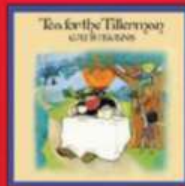
JULIE LONDON
Latin In A Satin Mood



DAVE BRUBECK
Time Out



DUKE ELLINGTON
Masterpieces By
Ellington



CAT STEVENS
Tea For The
Tillerman



DEAN MARTIN
Dream With Dean



MUDDY WATERS
Folk Singer



THE BEACH BOYS
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INDUSTRY UPDATE

AUDIO NEWS & VIEWS

THE NETHERLANDS: EINDHOVEN

Paul Messenger

Marantz may be perceived in the US as a purveyor of multichannel home-theater components, but in Europe, the company is very much seen as a maker of stereo hi-fi components, especially in the form of the Special Editions (SE) and Limited Editions (LE) tweaked by brand ambassador Ken Ishiwata over the past 30 years.

The main reason for a recent overnight trip to Eindhoven and the European headquarters of Marantz's parent company, D&M Holdings, was the introduction of SE versions of Marantz's SA-14S1 SACD/CD player and PM-14S1 integrated amplifier. Beefed-up top panels, damped cases, improved feet, and various other changes were effectively demonstrated using Boston Acoustics M350 speakers in Ishiwata's purpose-built listening room, which, before acoustic treatment, measured about 30' long by 21' wide by 8.5' high.

I found that room particularly interesting, especially in the ways it differs from the room designed by PMC's Peter Thomas, which I described in the September 2015 issue (p.19). With Thomas's roots in professional audio,



Marantz brand ambassador Ken Ishiwata in his listening room.

In Europe, Marantz is very much seen as a maker of stereo hi-fi components.

he was always likely to opt for the analytical capabilities of a relatively dry and non-reflective acoustic. Ishiwata, on the other hand, has gone to great pains to simulate an idealized domestic listening environment, retaining reflective surfaces, but engineering those surfaces and their shapes to avoid all of the peaks and troughs that plague

Below: Top, Marantz's SA-14S1 SACD/CD player; bottom, Marantz's PM-14S1 integrated amplifier.



KEN ISHIWATA PHOTO: PAUL MESSENGER

SUBMISSIONS: Those promoting audio-related seminars, shows, and meetings should e-mail the when, where, and who to JAtkinson@enthusiastnetwork.com at least eight weeks before the month of the event. The deadline for the December 2015 issue is September 20, 2015.

CALENDAR OF INDUSTRY EVENTS

ATTENTION ALL AUDIO SOCIETIES:

We have a page on the *Stereophile* website dedicated solely to you: www.stereophile.com/audiophile-societies. If you'd like to have your audio-society information posted on the site, e-mail Chris Vogel at info@XLinkAudio.com.

Please note that it is inappropriate for a retailer to promote a new product line in "Calendar" unless this is associated with a seminar or similar event.

CALIFORNIA

■ Sunday, September 27, 2-5pm: For the first time, the **Los Angeles & Orange County Audio Society** will hold its monthly meeting at **Shelley's Stereo & Video**'s new showroom, in Woodland Hills (22102 Clarendon Street). Our hosts, Alon Moscovitch and Wesley Katzir, will demonstrate the latest speakers and electronics for this showcase of planar-magnetic technology. Representatives from **Audeze**, **Magnepan**, **Shunyata Research**, and **Simaudio Moon** will address the Society. **Eastwind Import** will be on hand to offer for sale personally selected LPs and CDs. A raffle is planned and a fabulous lunch will be served. Parking is free. Guests, visitors, and new members are invited. For more information, visit www.laocas.com or call Bob Levi at (714) 281-5850.

■ Sunday, October 11, 2-5 pm: The **Los Angeles & Orange County Audio Society** will hold its monthly meeting at **Weinhart Design**, in the scenic hills of Bel Air (2337 Roscomare Road, Suite 1, Los Angeles 90077). David Weinhardt will feature **Synergistic Research**'s cables and products, including room treatments galore. We will feature Synergistic's HFT, Black Box, and Atmosphere, which will help you understand how to tune your room and build an easily adjustable listening environment. David Weinhardt will pull out all the

CONTINUED ON PAGE 19

most rooms. Breaking up standing waves while maintaining a fair amount of room reflectivity is much more difficult to achieve than just applying absorption. The end result created a very fine listening experience, though I understand that implementing such an approach is much more costly and time-consuming than Thomas's.

The SA-14S1SE and PM-14S1SE appear to supply genuine high-end sound at the very competitive UK price of £1800 each. Though the fate would be ill-deserved, I worry that these Special Editions might end up victims of the gulf that seems to have opened up between the low-cost and high-end sectors of today's audio marketplace.

DENMARK: STRUER

Kalman Rubinson

In my early days as an audio enthusiast, Bang & Olufsen was accepted in the US as a manufacturer of serious audio gear: phono cartridges, tonearms, microphones, reel-to-reel tape decks—and a multiband radio that the teenaged Kal Rubinson could only ogle. Today, the company's offerings are more of the "lifestyle" variety, available in the US only in dedicated B&O shops and

Apple stores. Yet even if their target market no longer includes *Stereophile* readers, one has the impression of B&O as a company with impressive engineering chops.

So when B&O invited me to visit them in their hometown of Struer, Denmark, I was curious about their motives. It cost them a lot to fly me to Struer: They must have had something important to talk about. As it turned out, they did, though at first they were cagey about precisely what it was.

Two flights and a long drive got me from New York City to Struer, a quiet town of 10,000 on the shore of the Venø Bugt, an arm of the North Sea. I was greeted by Jette Nygaard, B&O's PR consultant, and Geoff Martin, *tonmeister* and tech specialist in sound design. Over lunch, they told me that the acoustics team had in place a prototype loudspeaker based on a new technology. Our meal completed, I accompanied Martin to his listening studio: a 19.85' long by 15.5' wide by 8.65' high space, divided by a curtain that hid one half of the room from the listening positions. The plan was for me to listen without any preconceptions, visual cues, or clues. I had brought along a

flash drive of some 15GB of selections from familiar reference recordings, all in stereo, with resolutions ranging from 16-bit/44.1kHz to DSD.

I was very pleased with the system's natural, believable sound with vocals and small ensembles, and was particularly impressed with how imaging and tone seemed so appropriate for each individual performance: This was not a system that forced upon every recording its own personality. Listening blind, I was left with the impression that the left and right speakers were placed not very far apart and just behind the curtain—which surely was in keeping with the recordings I'd been playing.

When I played orchestral recordings, however, the soundstage seemed much wider and deeper: Now I felt that the speakers must be much farther apart. The bass was very tight and clean, which helped better define the soundstages of various Reference Recordings selections by Eiji Oue and the Minnesota Orchestra—including one ripped from their recording of Rachmaninoff's *Symphonic Dances* (Reference Recordings RR-96CD)—and to open up the Oehms Classics releases of Markus Stenz's recordings, with



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MUSIC HALL Ikura Turntable
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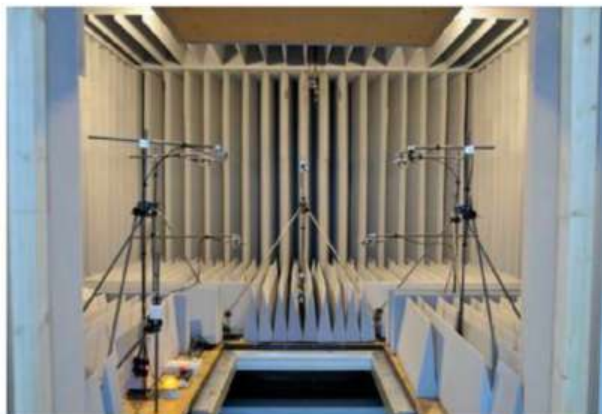
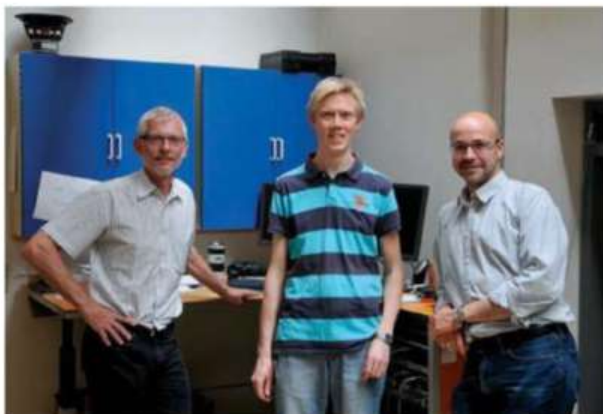
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PRO-JECT Xtension 10 Turntable
\$3,250



the Cologne Gürzenich Orchestra, of Mahler symphonies. The rich bottom end that blesses the latter recordings was less noticeable through the very balanced-sounding B&O system, depriving me of the chance to guess at the speakers' size and driver configuration based on that characteristic alone. The impression I got was of a neutral midrange with a slight treble excess, noticeable in the sounds of cymbals and upper strings.

Martin drew the curtains to reveal a space with minimal room treatments, no visible electronics, and two

I was very pleased with the B&O's system's natural, believable sound with vocals and small ensembles.

floorstanding speakers spaced widely apart, each about 3' from one of the room's far corners. In short, they were bigger and much farther away from me than I'd expected. Clearly, they were prototypes: I could see raw construc-

Above left: Left to right: B&O's Gert Munch, Jakob Dyreby, and Geoff Martin.

Above right: A peek inside B&O's production-line anechoic chamber, with its array of microphones.

tion materials and roughly applied patches.

Martin's backstory of these prototypes began with a little history of B&O's sound-design methods—and a visit to the company's 1862-cubic-meter anechoic chamber, aka the Cube. He introduced me to Gert Munch, B&O's electroacoustics technical specialist, and together they explained

PHOTOS: KALMAN RUBINSON

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"... the mere fact that it is not unreasonable to compare the sound of the \$4999 (pair) Triton One with the sounds of speakers costing tens of thousands of dollars more per pair says a lot about their level of performance ..." – Robert Deutsch, *Stereophile*

"A Giant-Killer Speaker ... Borderline Class A"

– *Stereophile Magazine*

Stereophile's Recommended Components Class A rating is their highest and most coveted honor. This year, for Class A Full-Range speakers, there were 12 honorees, ranging in price from \$16,000 to \$200,000 a pair, with an average cost of \$54,000. The fact that of all the 22 Class B Full-Range speakers, only one, the \$4999 a pair Triton One, was singled out and praised as, *"Borderline Class A"*, is a very unique and significant honor, totally confirming its unique stature and achievement.

"An absolute marvel ... Triton One shames some speakers costing ten times as much."

– Caleb Denison, *Digital Trends*

The Triton One is an evolutionary speaker that builds upon all the advanced technologies that have made the Tritons mega-hits around the world. This new top-of-the-line flagship was engineered to deliver even better dynamics and bass than the extraordinary Triton Two, along with further refinement of all aspects of sonic performance. How well have we succeeded? In the words of HD Living's Dennis Burger, the Triton One delivers, *"... the sort of upper-echelon performance that normally only comes from speakers whose price tags rival a good luxury automobile"*.

Triton One "creates visceral, tangible waves of pure audio bliss"

– Dennis Burger, *HD Living*

Great sound is what it is all about and the Triton Ones are, as HiFi+’s Chris Martens raved, *"jaw droppingly good ... one of the greatest high-end audio bargains of all time with a dazzling array of sonic characteristics that are likely to please (if not stun) the finicky and jaded of audiophiles"*. The Ones were specifically engineered to excel with all types of music as well as movies. Best of all, they offer previously unheard of value, as Brent Butterworth wrote in *Sound & Vision*, *"I heard a few people saying the Triton One sounded like some \$20,000-and-up high-end towers, but I disagree: I think they sounded better than most of them"*. Darryl Wilkinson summed them up best, *"A Masterpiece ... GoldenEar has fully ushered in the Golden Age of the Loudspeaker"*. Hear them for yourself and discover what all the excitement is about.



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how they used the Cube. In particular, Martin and Munch showed me how earlier B&O loudspeaker models had beautiful on-axis measurements and smoothly controlled radiation patterns, yet nonetheless exhibited, with rising signal frequency, the same narrowing of polar response shared by most box speakers—even B&O models that use “acoustic lenses” to mitigate that effect. Martin suggested the feasibility, with the powerful digital signal processing (DSP) available today, of a speaker with a uniformly controlled radiation pattern throughout the audioband. He was not suggesting an omnidirectional speaker, but one whose on-axis frequency response remains unchanged through, say, $\pm 45^\circ$, so that room-boundary reflections of waves in different parts of the room have the same tonal balance as one another: Since those reflections tend to dominate the spectral color of all listening other than that in the nearfield, a technology such as Martin described would help mitigate the room’s influence on the sound. That led B&O to develop a three-way speaker with additional, angled tweeters, midrange drivers, and woofers, to linearize the horizontal polar response—a technology B&O calls Beam Width Control.

But simply adding drivers to change a speaker’s polar response creates new

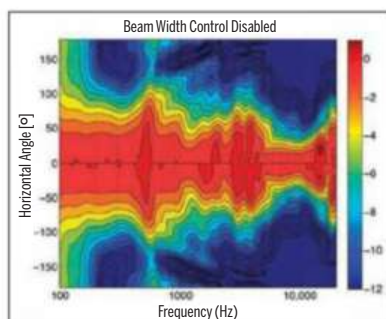


Fig.1 B&O prototype loudspeaker, polar response with Beam Width Control disabled.

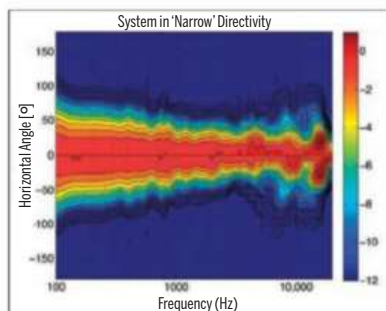


Fig.2 B&O prototype loudspeaker, polar response with Beam Width Control operated in “Narrow” mode.

problems in how the drivers interact: There is now greater potential for frequency-response irregularity within the wider arc of radiation, possibly

affecting on-axis response. B&O’s solution was to feed the extra drivers not the same signal as the on-axis drivers, but to give them only the signal necessary to aid in correcting the radiation pattern of the loudspeaker as a whole. Martin’s collaborator in this endeavor is *acoustic constructor* Jakob Dyreby, who designs and programs the DSP, providing a customized Finite Impulse Response (FIR) audio filter for every woofer, midrange, and tweeter. This requires a system in which every driver is fitted with its own digital-to-analog converter and amplifier.

The process begins with building prototypes, taking measurements in the Cube, writing algorithms to target the signal corrections—and, of course, listening. Martin told me that he listens to the prototypes much as I did—blind—and takes notes on what he hears. He provides his observations and suggestions to Munch and Dyreby, who respond to them in another cycle of construction, measurement, and programming.¹

Later on, Martin and I returned to his listening studio for the second of what turned out to be four listening sessions spread over two-and-a-half days. Now, I returned to my flash drive full of music and threw everything

¹ You can find Martin’s own thoughts on Beam Width Control at <http://tinyurl.com/ovjg5ek>.—Ed.

CONTINUED FROM PAGE 15

stops to show you what’s possible in great sound—come hear and see his superb electronics and speakers (to be announced). October is a time for great listening to the newest products available: Join us to find out what’s on that list at Weinhart Design. For more information, visit www.laocas.com or call Bob Levi at (714) 281-5850.

■ Saturday, October 17, 10am–10pm: **The Burning Amp Festival** will be held this year in Silicon Valley, at **Interana** (305 Walnut Street, third floor, Redwood City 94063). Because this new venue provides more listening rooms in which more systems can be auditioned, we are asking exhibitors to demo their previously built and shown DIY components along with their latest creations. **Nelson Pass** will present his latest breakthrough, and offer three other presentations. All day, **Siegfried Linkwitz** will demo his LS Studio Speaker system with miniDSP crossovers and **Bruno Putzeys’s** Hypex amps. Food and snacks provided; lunch available.

Exhibitors: Please arrive by 9am. Social Hour(s): 8pm. More information at www.burningamp.org, or contact Mark Cronander at mark.diyaudio@gmail.com.

COLORADO

■ Friday–Sunday, October 2–4: The 12th **Rocky Mountain Audio Fest**, incorporating **CanJam@RMAF**, takes place at the Denver Marriott Tech Center (4900 S. Syracuse Street, Denver). Full details at www.audiofest.net.

GEORGIA

■ Thursday–Saturday, September 17–19: **HiFi Buys** will celebrate the Grand Opening of their new store (3157 Peachtree Road, Atlanta). On Thursday, **Michael Fremer** will be on hand to discuss all things analog. Special guests, refreshments, and prizes will be enjoyed throughout the weekend. For more info, visit www.hifibuy.com or call (770) 931-0606.

■ Sunday, October 18, 2–5pm: The **Audio Video Club of Atlanta** and the new **HiFi Buys A/V Store**, in

Buckhead (3157 Peachtree Road NE, Atlanta; 770-931-0606; www.hifibuy.com), are hosting a program featuring **Audio Research, Dynavector, Grado, Magnepan, PSB, Rega, Vandersteen, VPI**, and many other top brands, as well as an extensive collection of fresh LP pressings. Guests welcome; refreshments provided. For information, contact John Morrison, President, at (770) 330-3919 or jhm3@bellsouth.net; or Chuck Bruce, VP, at (770) 550-1434. Visit the club’s website for latest details: www.a-vcoa.org.

MINNESOTA

■ Tuesday, September 15, 7–9pm: The **Audio Society of Minnesota** will hold its first meeting of the 2015–16 season. The meeting will be held at the Pavék Museum of Broadcasting (3517 Raleigh Avenue, St. Louis Park 55416). Refreshments will be served, and guests, visitors, and new members are welcome to attend. For more information about this meeting, visit our website: www.audiomn.org.

I had at the B&O system. I found that the size of the soundstage was *consistently* proportional to the size of the ensemble and the recording. I found that the bass was very well extended, taut, and satisfying. Most of all, I was impressed by the prototypes' reproduction of detail throughout the audioband, and the uniformity of that quality across the soundstage.

How much of this was due to B&O's Beam Width Control technology (to which there are many more aspects than I can describe in this space)? The measured effect is impressive.

Fig.1 on p.19 shows the loudspeaker's polar response with Beam Width Control disabled; fig.2 shows it in operated in "Narrow" mode.

At one point, Martin defeated the polar-radiation correction by using his laptop to change the speakers' DSP settings. The soundstage receded and became more diffuse, and imaging center-fill became less well-defined. He then performed his parlor trick: With the polar-radiation correction turned off, he walked across the room with a fiberglass panel measuring 2' by 4'. When the panel passed between

me and a speaker, the sound from that speaker was muffled and the stereo soundfield collapsed. With the polar-radiation correction restored, the effect of holding the panel in front of a speaker was to shift the soundstage slightly toward the other speaker—but with no significant change in apparent frequency response or the quality of spatial reproduction. To me, this demonstrated that room reflections do dominate the perceived sound, and suggests that the B&O team have hit on an important solution for minimizing the pernicious consequences.

UK: CRANAGE, CHESHIRE

Paul Messenger

Cranage is not an abbreviation of *cranial damage* or *cranberry potage*; it's the name of a charming village in northwest England, just south of Manchester. The splendid Cranage Hall, mostly built in the 1820s, and later expanded and converted into a hotel, makes the village a promising site for a hi-fi show.

This is only the second year of the North West Audio Show, a one-day event awkwardly timed for June 26, coincident with the Glastonbury Festival weekend. However, having attended the 2015 event, I'm certain NWAS will become a regular and even pivotal event on the UK audio calendar.

But these are still early days, and NWAS 2015 was small—it took me less than six hours to cover it—but I felt that that time was very well spent, having made a number of useful contacts. More relevant were the smiles on the faces of the exhibitors, and the large numbers of attendees. The reason for both was that no one felt that they were being ripped off by the show's organizers. Unlike many other UK shows, entry was free for visitors, and

most exhibitors felt that the cost of their rooms was reasonable. One obvious indicator of the show's promise was the appearance of a number of brands that hadn't exhibited at any of the UK audio shows of the last few years. I spoke with representatives of some of these brands, who said that the reason for their absence had been the high cost per visitor of recent shows. (Exhibitors also regularly moan about the high cost of exhibiting at High End, in Munich, but are inevitably swayed by that show's huge numbers of visitors.)

It was noteworthy that the NWAS was strongly oriented toward smaller audio companies. The notable absence of major brands only contributed to the prominence of the less-well-established distributors and manufacturers who were present, and I saw several interesting items from small, cottage industriess: **Sonority Design** makes isolation platforms and acoustic panels in the West Midlands; **Evolution Audio** creates **Wychwood Audionics** AC power conditioners and distributors in Yorkshire; and **Ziro Audio** assembles damped and shielded interconnects, speaker and

phono cables, power cords, and HDMI links in Norfolk. I doubt if any of these operations could have afforded to exhibit at one of the bigger shows, yet all should provide grist for my reviewing mill over the next few months.

NuNu Distribution displayed sev-



Above: Phil Balaam reviving the Nytech brand. **Below left:** The Thöress Phono-Entzerrer: a very complex phono stage from Germany. **Below right:** The bamboo booplinh for the Sondek LP12.



PHOTOS: PAUL MESSENGER



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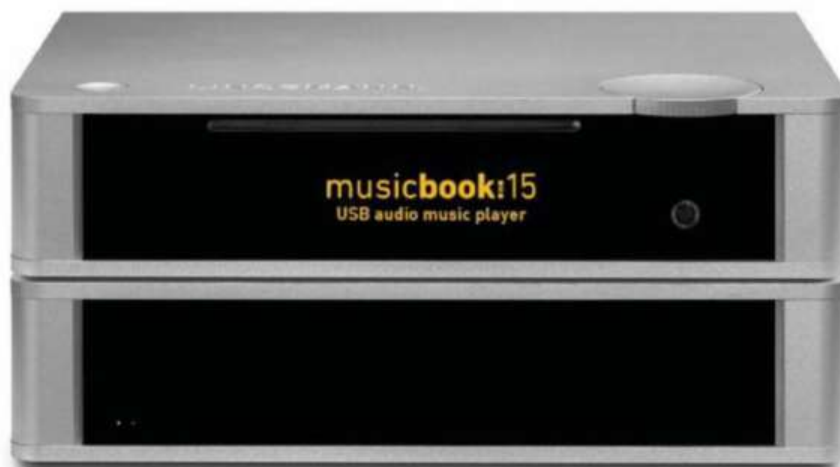
The music begins. The instruments resonate in the depths of the moment as the grandeur builds and the music swirls into full orchestration. The highs, the lows, the mids, and the nuances in between have all come out to play together, creating a beautifully immersive audio experience in a deep state of aural bliss. This is how the vibrations should feel, and how sound should be.

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Dr. Jekyll.



Mr. Hyde.



The New Musicbook: High-End Sound With Ease and Style.

For 25 years Germany's Lindemann Audiotechnik has been designing some of the world's most advanced digital and amplification products. Their new Musicbook offers true high-end sound without all the boxes, racks, cables and complications of a traditional high-end audio system. Musicbook gives you the best of both worlds: genuine high-end sound in an elegant all-in-one-type system that can easily be placed anywhere in the home or office.

Pictured above is the Musicbook 15/55 system. On the outside it's sumptuous, graceful and cleverly designed with refinements and finesse worthy of Dr. Jekyll. It features: solid aluminum casework, state-of-the art DACs, a full-function remote control and an easy-to-use one-touch control wheel.

But on the inside beats the heart of a killer system bursting with the pure adrenalin of Mr. Hyde. With its: fully balanced analog preamp and volume control, state-of-the-art AKM 32bit/768kHz DAC capable of native DSD playback, superb class A headphone amplifier, built-in high quality CD player, all the analog and digital inputs you could ever want and balanced class D power amplifier, with a fully discrete circuit that pounds out 240 watts, Musicbook delivers the goods!

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LINDEMANN.

eral brands in multiple rooms, including some imported components from Pioneer subsidiary **TAD**, **Oracle's** Paris Mk.V turntable and tonearm, **Renaissance Audio** and **Sonneteer** amplifiers, and **Quadral** loudspeakers. Original employee Phil Balaam continues to revive the **Nytech** brand, and showed some brand-new, chrome-bumper-style electronic components.

It's said that the **Booplinth Company's** booplinth, displayed by dealer **Brian and Trevor's House of Hi-Fi**, is the best-sounding foundation for a Linn Sondek LP12 turntable; the fact that it's machined from a single solid block of bamboo laminate seems a good basis for the rumor. I've enthused before over a Polish horn speaker, the **Bodnar Audio** Sandglass Fantasy, which uses a Sonido driver from Hungary, but found that importer **Fidelity Art** is now handling the very similar-looking Sonido Aion.

A couple of other speakers that attracted my attention: the Uccello, a three-way horn design from **Simon Mears Audio** that somewhat



resembles the original Klipschorn and features exceptional woodworking. (Mears's other product is a reproduction of the original Tannoy Auto-graph.) The unusually slim **SoundKaos** SK16 might nominally be a 2.5-way design, but most of the audioband is reproduced by a single Enviee "full-



Left: The Sonido Aion speaker. **Right:** Martin Gateley with the various SoundKaos speakers.

range" driver from German company **Galm Audio Products**.

Time will tell whether the UK has an impressive new show in NWAS, but the portents look very good.

UK: VUE CINEMA, WESTWOOD CROSS, THANET

Paul Messenger

I felt a lump in my throat when the Grateful Dead announced its very last gigs: the "Fare Thee Well: Celebrating 50 Years of Grateful Dead" concerts, which took place at Soldier's Field Stadium in Chicago last July 3, 4, and 5. A confirmed Deadhead, I've long regarded the band as the zenith of rock music, and have attended nearly every one of their UK gigs. But the thought of trying to buy tickets, then flying to Chicago, just didn't seem practical.

As the day approached, however, I heard that some local cinemas would be screening all three nights in their entirety, and, with a little help from the Internet, I found one, less than 30 minutes away by car, that would screen the concert the following evening. It wouldn't be "live," of course, but it was better than nothing. I booked tickets.

I arrived at the multiplex at the appropriate time, collected my ticket, and bought an overpriced ice cream. I entered the auditorium with some trepidation—my only previous experience of "live at the movies" had been a slightly disappointing screening of Monty Python a year ago. I needn't have worried—the entire experience

was so impressive that I decided to write it up. The only disappointment was that the small movie theater lacked atmosphere, everything was in the dark, and the attendees were few and aging.

Fair compensation was provided by an excellent seat: comfortable, dead center, and just the right distance from the screen. By the end of the first number, I was coming to the conclusion that my decision to go for the screening rather than the concert experience wasn't so bad after all, even after removing from the occasion the cost and traveling time. Of course, the real thing has distinct advantages, but it turned out that the cinema experience had a lot going for it. Sitting in a comfy chair instead of being bounced around and crushed by a sweaty crowd has its pluses. Some might have found the camerawork and editing a touch too enthusiastic, but I've seen much worse—and the camerafolk delivered all manner of interesting close-ups of musicians' fingers and facial expressions.

The most gratifying surprise was that the sound quality was very good indeed, and included excellent stereo imaging. I might have wished for a bit more low-end weight and power, but with a little concentration Phil Lesh's bass was still audible, while Phish's

Trey Anastasio did an impressive job of standing in for the late Jerry Garcia.² Most of the lead vocals were sung by a heavily bewhiskered Bob Weir, standing at center stage; his voice might not be what it was, but he sounded better than Roger Daltrey had in the Who's performance at the Glastonbury Festival the week before.

Although watching a rock concert in a cinema is very different from actually attending that concert, it's by no means invalid, especially as a rock concert is invariably played through a substantial PA system. (The situation with an acoustic orchestra or choir, where there is no electronic reinforcement, is of course very different.) Indeed, the confines of a movie theater inevitably make much less demand on a PA system than a 60,000-seat stadium, which might help explain why the sound in my local cinema was so good.

Going to a movie theater to see and hear a favorite act might seem a second-rate experience compared to a genuine live performance at a stadium or festival, but don't knock it: Over and beyond considerable bonuses in cost and convenience, it may well have some genuine advantages in sound and picture quality. ■

² See Elizabeth Cohen's tribute at www.stereophile.com/musicrecordings/82/index.html. —Ed.



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ANALOG CORNER

BY MICHAEL FREMER

THIS ISSUE: Mikey considers vinyl-resurgence deniers and two expensive cartridges.

Cornering the Scoffers

Add to the deniers of the Holocaust and Climate Change those who say that the vinyl resurgence isn't happening.

Seriously, the pushback was bound to happen, and the bigger this so-called “hipster fad” gets, the more the scoffers sweat. In 2014, according to my sources—representatives of the world's largest pressing plants—more than 73,985,000 LPs were pressed.¹ That's correct: almost 74 million LPs. Taking into consideration such things as multi-LP boxed sets like *The Beatles in Mono* (which might be counted as a single record in terms of sales), defective discs rejected by consumers or retailers, and unsold records, of which there surely are many in the pipeline, we could cut the number in half—and still have around 35 million. That's more than a 40% increase worldwide over 2013.

Pro-Ject alone claims to have sold some 110,000 turntables in 2014, and their least expensive model, the Elemental, wasn't the biggest seller. The Pro-Ject factory, in the Czech Republic, runs three shifts 24/7 and employs some 400 people. I understand from Rega Research, VPI Industries, and other turntable makers that 2014 was their best year ever.

Nonetheless, there's denial. I was first confronted by it during an otherwise collegial “Meet the Editors” panel at T.H.E. Show Newport Beach 2015. That was when Chris Connaker, editor of *Computer Audiophile*, grouchy dismissed as ridiculous my claim that vinyl is “huge,” because more people streamed Taylor Swift's 1989 (a great album, actually) than the total vinyl sales for the 2014. Trouble is, I never claimed that vinyl is “huge,” on that panel or anywhere else. When I mentioned that to Connaker, he sarcastically suggested that rewinding “the tape” would prove otherwise. So I obtained and posted on AnalogPlanet.com² the video recording of the panel, in which Connaker also says that vinyl is “a fad,” and that, when he plays a record, it “sounds terrible.”

The point I *did* make during the panel discussion: Why compare vinyl's resurgence with streaming or with downloads, or even with other physical media? While we're at it, why not dismiss gourmet dining, which barely exists compared to fast-food franchises? Why not dismiss Ferrari by comparing its minuscule sales numbers with Toyota's?

Of course, the best response is: Why compare those companies and their products *at all*? Why compare vinyl to all-you-can-eat audio streaming, which, other than Tidal's CD-resolution service, has the same effect on my ears that all-you-can-eat buffet grazing has on my stomach?

This brings me to the most surprising vinyl denier of all: audio journalist Ken Kessler, a longtime friend. Kessler expressed his vinyl cynicism in the December 2012 issue of the UK magazine *Hi-Fi News*: “Unlike many of my dewy-eyed colleagues, I don't buy into the alleged ‘LP revival.’ My cynicism is based on numbers.”³ He went on to report that, in 2011, according to Nielsen SoundScan—which I can assure you is notoriously unreliable—337,000 LPs were sold in the

UK, which Kessler correctly describes as an “upward blip.”

However, in 2014, UK LP sales reportedly reached 1.3 million. That didn't stop my friend from belittling the trend in a more recent piece, for the online magazine *SoundStage! Hi-Fi*, in which he dismisses the increase by comparing that number to a month's worth of sales of Beatles albums in 1965. Beatles? 1965? Kessler continued, “So please don't tell me the LP is back. It isn't. It's a niche, however much we love it.”⁴

I agree: It's a niche—just as the entire high-performance audio industry has *always* been. So what? The vinyl revival is a niche, *and* the LP is incontrovertibly back.

Before referencing yours truly and signing off, Kessler

The bigger this so-called “hipster fad” gets, the more the scoffers sweat.

rightly dismissed a statement by UK audio retailer John Lewis, reported in the *Daily Mail*, claiming a 240% increase in UK turntable sales in 2014. After reading the fine print,

Kessler learned that a good percentage of those ‘tables were groove-chewing “kiddie” and Crosley⁵ models. Ken Kessler concluded his column with:

“I tell you this lest my dear friend Mikey Fremer or some other champion of analogue suddenly gets a massive hard-on because of news from the UK ‘that turntable sales are up 240 per cent.’ For those with a glass half full, the sales of *any* record player are good news.

“For those of us with leaky vessels, we await the Second Coming.”

I'm happy to be cited in *any* context as having a massive hard-on, but groove-chewing ‘tables have never been on my radar. They're not welcome, nor are they needed to make the case for the vinyl resurgence—in fact, they're a toxin on the market. The glass is well more than half-full without them. In fact, by any metric, our analog cups runneth over.

Return of the Measurement Scolds

Yes, measurements count. Listening counts more. After all, you don't *listen* to measurements, and being guided by them to the exclusion of what your ears tell you seldom turns out well. For 40+ years, *listeners* held the high-end audio line—but now, thanks to the Internet's electronic soapbox, the measurement scolds have returned in force.

1 For details on how I arrived at this number, see www.analogplanet.com/content/approximately-73985000-records-pressed-worldwide-2014-so-how-can-92-million-be-correct.

2 See www.analogplanet.com/content/rewind-tape.

3 See www.kenkessler.com/hi-fi/off-the-leash/.

4 See www.soundstagehifi.com/index.php/international/soundstage-uk/861-turntables-are-back.

5 Crosley is an old name in consumer goods that, after changing hands in the '70s, is now applied to a line of *very* inexpensive electronics, including a \$99.95 all-in-one portable record player.

Online click-bait stories “prove” that CDs are without flaw, and that high-bit-rate MP3s are sonically indistinguishable from that supposedly “perfect” format. An ongoing effort, described by some as “the Emperor’s new clothes” or “a waste of digital real estate,” hopes to thwart high-resolution digital audio—even as digital storage capacity has become dirt cheap and wide bandwidth plentiful. Some online stories claim that higher resolution produces *worse* sound. In what other field is so much effort expended in putting a stopper on *better*?

Recently, audio writer Brent But-

terworth, whom I greatly respect, wrote on *AudiophileReview.com*: “Many audio enthusiasts describe the effects of MP3 much as they would describe the

So MP3s make CDs sound like *analog tape*? I wish!

effects of dubbing audio onto analog tape, which has a deleterious effect on almost every aspect of audio quality (frequency response, dynamic range, signal-to-noise ratio, distortion, etc.)”⁶

Really? So MP3s make CDs sound

like *analog tape*? I wish!

Yet somehow, analog tape produced 40+ years of the *greatest* recordings ever made. If digital recording is so good and analog tape has such a “deleterious effect on...audio quality,” where are today’s Kenneth Wilkinsons, Bob Simpsons, Fred Plauts, and Lewis Laytons? I’m waiting. What digital recording can be compared to Harry Belafonte’s *At Carnegie Hall*? Recorded in 1958, it continues to astonish listeners almost 60 years later.

⁶ See www.audiophilereview.com/cd-dac-digital/how-much-does-mp3-affect-dynamic-range.html.

FUUGA MOVING-COIL CARTRIDGE: MIYABI REBORN?

Even if this cartridge *weren’t* any good, its backstory would be worth telling. But don’t worry: It’s plenty good—and, at \$8950, plenty pricey.

In the 1970s, Haruo Takeda was the man behind the cartridges sold under the Cello, Krell, and Mark Levinson brand names. It was only toward the end of that decade that Takeda began work on his own cartridge: the original Miyabi—which, roughly translated from the Japanese, means “elegance.”

Made only in limited numbers, the Miyabi quickly became a legend. Later, Takeda partnered with 47 Laboratory’s Junji Kimura to produce the Miyabi 47 cartridge, which shed the original Miyabi’s semi-cylindrical body but retained its alnico magnets.

I wrote about the Miyabi 47 some years ago (in Analog Corner No.138), and while I appreciated its intoxicating liquidity, and especially its unique ability to track dynamic gradations and

produce “speed” without etch, its top end was too laid-back for my system and taste.

Haruo Takeda retired a few years ago, but Osamu Nagao, the Japanese distributor of Miyabi cartridges and a good friend of Takeda’s, decided to revive the brand—and, more important, the cartridge’s singular sound. Nagao brought to the project 30 years of analog experience, including working at the Japanese companies Stax Limited, Audiocraft, and R.F. Enterprises,

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the importing/distribution company credited by many with introducing high-performance audio to Japan. Nagao was also part of the design team that created the Infinity Black Widow tonearm.

Nagao hired Tetsuya Sukehiro, a young cartridge designer with more than a decade's experience making OEM products for some well-known (but unnamed) brands. Three years later, in summer 2014, they introduced the Fuuga, a cartridge whose name means "elegance with flair." They nixed their original plan to reverse-engineer the Miyabi in order to use newer and better materials, and because Takeda's unique cantilever suspension made unit-to-unit consistency of performance difficult, if not impos-



Nagao never forgot the Miyabi's sound, and still wanted to re-create it.

sible, to attain. But Nagao never forgot the Miyabi's sound, and still wanted to re-create it.

The original Miyabi's alnico magnet system was scrapped in favor of extremely powerful magnets of neodymium (this change alone will probably induce heart failure in Miyabi groupies), and the rigidity of the rear yoke structure was greatly increased by making it of solid iron (instead of an alloy of cobalt and iron), and incorporating it into the cartridge's body, which

was also updated—from solid aluminum to three layers of different-density duralumin alloy.

The Fuuga outputs 0.35mV (50mm/s, 0-peak, 45°) and has a desirably low impedance of 2.5 ohms at 1kHz. Its claimed channel separation is >27dB at 1kHz, and its compliance is a low 7×10^{-6} cm/dyne at 100Hz. Appropriately, given its low compliance, the Fuuga has a relatively high mass of 15gm. Its tapered cantilever is of A2017 aluminum alloy, to which is fitted an 8 by 40µm parabolic hybrid (*ie*, hyper-elliptical) stylus of pure diamond. The recommended vertical tracking force (VTF) is 2.0–2.2gm. The Fuuga is imported by Sakura Systems (which also imports 47 Laboratory), and distributed in North America by AudioArts.

Thoroughly Modern Miyabi

For \$8950, you're entitled to superb build quality. The Fuuga delivers. It exhibited a stylus rake angle (SRA) of 92.43° with the tonearm parallel to the record surface. (I listened to it in the Kuzma 4Point, Graham Engineering Elite, and Swedish Analog Technologies arms.) With the cantilever visually perpendicular to the record surface, I



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measured channel separations of 29dB (L-R) and 28dB (R-L). I didn't adjust if further.

The best way to describe the Fuuga is as a modernized Miyabi. About the Miyabi 47 cartridge, I wrote in this column, in October 2006:

I found it big, bold, nuanced, surprisingly well-detailed, rich and chocolately in the mids, and smooth up top. It wasn't the last word in air and detail on top, but it was so well balanced, so easy to listen to, so surprisingly fast for what it did deliver in that region, that I didn't notice the loss of air and resolution at the very top.

The Fuuga missed *nothing* in air and extension on top, yet retained all of the Miyabi 47's most enticing qualities. It was silky and smooth overall, with a still-rich midrange. The bottom end was well developed and extremely well controlled, though a few other cartridges can push lower-bass extension and dynamics and textural production to higher levels.

The Fuuga's tonal balance struck an essentially neutral pose, and its handling of transients, and especially vocal sibilants, yielded both detail and smoothness. There was zero harshness and/or hardness, but neither did it sound soft or romantic as it effortlessly presented soundstages of generous size.

The Fuuga was not as "rich and chocolately" as I remember the Miyabi 47 sounding, nor did it sound as rich as, say, Miyajima Laboratory cartridges generally are—or, for that matter, Ortofon's Anna. It was silkier and sweeter than either the Ikeda KAI or the Lyra Atlas, perhaps due to its aluminum-alloy cantilever and less severe stylus profile (just guessing). And if you ask me what the hell "chocolately" sounds like, ask a wine critic what asphalt tastes like.

The Fuuga didn't resolve quite as much spatial and transient information as the Ikeda KAI or the Lyra Atlas, or perform with the same blazing speed, but it more than compensated for that with its startling macrodynamic *slam*, effortless dynamic scaling, and

an overall transparency that increased my feeling that I was listening to live instead of recorded music.

The Fuuga was full of surprises. When I thought a recording's dynamic limits had peaked, a drumstroke or other event would occur that drove the SPL beyond my expectations. Sometimes, when I thought I'd heard the upper-frequency limit of a familiar LP, the Fuuga surprised me with a silky stratosphere above that, minus even a hint of edge, etch, or stridency. And it was equally effective with every genre of music.

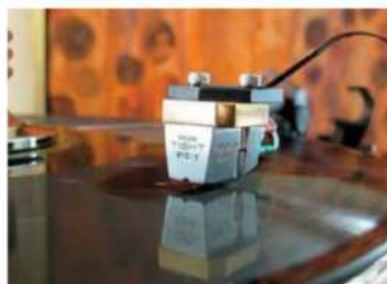
I have to stop here, to leave room for another winning cartridge, but I plan to revisit the Fuuga next month. Many late-night, almost-*all-night* listening sessions have told me that the Fuuga is, without a doubt, among the handful of highest-performing, most-enjoyable cartridges I have heard. If you get to try one, you'll hear the difference between a good transducer and one that makes a coherent statement of both tonal neutrality and unsurpassed musical beauty.

AIR TIGHT PC-1 MAGNUM OPUS

At \$15,000, Air Tight's PC-1 Magnum Opus moving-coil cartridge joins Clearaudio's Goldfinger at or near the top of the cartridge price heap. Like previous Air Tight cartridges, it's built to the specifications of company co-founder Atsushi Miura by his friend Mr. Matsudaira, who builds and markets cartridges for My Sonic Lab.

What accounts for a price that many would describe as outrageous? Two specifications offer a clue: The PC-1 Magnum Opus's internal impedance is an ultralow 1.4 ohms, yet its output is a generous 0.45mV. That combination usually means very few turns of coil wire to ensure a *very* low moving mass, and *very* powerful magnets—in this case, neodymium 50 (the strongest neodymium currently available is graded 52). The benefits of combining low moving mass with a real-world output level should be obvious to all readers of "Analog Corner." The only possible disadvantage is the need to load the cartridge at well under 100 ohms.

The only other cartridge line I know of that manages this combination of ultralow impedance and generous output is from Kubotek's Haniwa Audio Systems. These are also built by Matsudaira, but for another of his friends: Dr. Tetsuo Kubo. I've just received the



latest version of the Haniwa, and will report on it soon.

Ultralow-impedance cartridges are ideal for current-gain phono preamps such as the B.M.C. Phono MCCI⁷ or the intriguing MR Labs VERA 20.⁸ Unfortunately, I had neither in-house for these listening session, but the Air-Tight cartridge matched well with Ypsilon Electronics' VPS-100 Mk.2⁹

phono stage and MC-10L step-up transformer, the latter's secondary winding loaded with 15K ohm nude Vishay resistors.

The PC-1 Magnum Opus's other features and specs include: a semi-line-contact stylus (dimensions not specified), a cantilever of pure boron, fre-

quency range of 10Hz–50kHz, channel balance of <0.5dB/1kHz, and channel separation of >30dB/1kHz. The PC-1 Magnum Opus weighs 11gm, has a compliance of 8×10^{-6} cm/dyne, and is designed to track at 2–2.3gm.

Like the Fuuga, the PC-1 Magnum Opus is impeccably built and carefully QC'd: Placing the tonearm parallel to the record surface produced an SRA of 92°, and with the PC-1's cantilever perpendicular to the record surface, I measured a precise 31dB crosstalk in both directions—a first, in my experience.

7 See my review at www.stereophile.com/content/bmc-phono-mcci-phono-preamplifier.

8 See my review at www.analogplanet.com/content/current-affair-intriguing-mr-labs-vera-20-mc-phono-preamplifier.

9 See my review at www.stereophile.com/content/ypsilon-pst-100-mkii-line-preamplifier.

While the Fuuga wasn't exactly reticent or stingy in terms of dynamics or bottom-end extension, switching to the far more expensive PC-1 Magnum Opus produced an adrenaline rush of dynamic energy, exuberant slam, and—especially—low-frequency weight, texture, and richness. The Magnum Opus didn't produce the Fuuga's beauty or sheen, but from top to bottom, it dug deeper and produced rounder, fuller images and greater three-dimensionality solidity. It was a big, generous sound that was 100% free of mechanical artifacts or tonal anomalies. And at this price, a cartridge had better be damn near inaudible.

With the Fuuga, I'd greatly enjoyed the sonically spectacular AAA reissue of Sam Rivers's *Contrasts* (LP, ECM 1162). So I was surprised by how much more the PC-1 Magnum Opus had to offer on the bottom, both from Dave Holland's double bass and, especially, the depth and power of Thurman Barker's fierce, panned drum *thwacks* and cymbal strokes. The word that immediately came to mind for the Air Tight's bottom end was *ferocious*: unyielding and fully controlled.

While my previous encounters with

The PC-1 Magnum Opus dug deeper and produced rounder, fuller images.

Air Tight and My Sonic Lab cartridges had always revealed a burnished top end, the PC-1 Magnum Opus didn't. Its sound was "whole" from top to bottom: rich on top, too, *and* fully extended. When I played an original "six-eye" of the Dave Brubeck Quartet's *Time Out* (LP, Columbia CS 8192), the cymbals sizzled, and not all that sweetly—as you'd prefer if you wanted to hear the real deal. The Air-Tight's top end was ultrafast and detailed, but unmarred by etch. And, like the Fuuga, it sailed precisely and smoothly through vocal sibilants.

The more costly PC-1 Magnum Opus produced more subtle attacks overall, slightly more generous sustains, and more graceful decays, easily heard from Brubeck's piano and Paul Desmond's alto sax in "Strange Meadow Lark," which blossomed and bloomed with the airy ease their playing deserves.

Like the Swedish Audio Technolo-

gies tonearm (\$28,000), Air Tight's PC-1 Magnum Opus cartridge justifies its price of \$15,000. Together, they cost precisely what my Saab 9-3 Turbo-X cost me in 2008. You can say that's ridiculous, and I won't argue. But if someone can deliver this level of sonic excellence for a whole lot less, they'll make legions of vinyl fans very happy. There's a lot more locked in the grooves of your LPs than you might think, just waiting to come out and play. ■

CONTACTS

Fuuga

US distributor: AudioArts
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Web: www.audioarts.co

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Jay Victor, Designer

audio cables for over a dozen high-end audio brands.

Jay designed the Pangea Audio AC-14 AC power cable specifically for source components like preamps, CD players, and DACs. Jay kept the price low – \$29.95/1M – by keeping the design elegantly simple and by using high-integrity molded connectors. Pangea Audio loved the AC-14 cable and introduced it to the market.

Four years ago, Pangea Audio decided to develop a low price power cable as an upgrade to the cheap power cables that came in the box with nearly all high-end audio gear. They asked veteran cable designer, Jay Victor, for help. Holder of more than forty patents and trademarks for audio gear, Jay Victor has designed high-end

Shortly after AC-14's introduction something unexpected happened. Audiophiles around the country began reporting the inexpensive AC-14 sounded better than other upgrade power cables costing five to ten times more. Word of AC-14's excellent performance quickly spread among audiophiles. Over the next few years, more than *twenty thousand* AC-14 cables were sold.

Pangea Audio's AC-14 was quickly followed by the massive seven-gauge AC-9 power cable for the high-current demands of power amplifiers, and then by other more advanced "SE" Pangea Audio cables. These newer cables featured better shielding and higher grades of Japanese-made copper for improved performance. The new cables sold extremely well. Then one day – without any warning – the Japanese company announced it was no longer making the high-end copper.

Pangea Audio began searching for a new high-grade replacement copper.

American Solution Courtesy of George Cardas



**George Cardas
Cardas Audio**

Pangea Audio contacted George and asked if he would be willing to sell them his premium copper. "Why not?" was George's reply and they struck a deal.

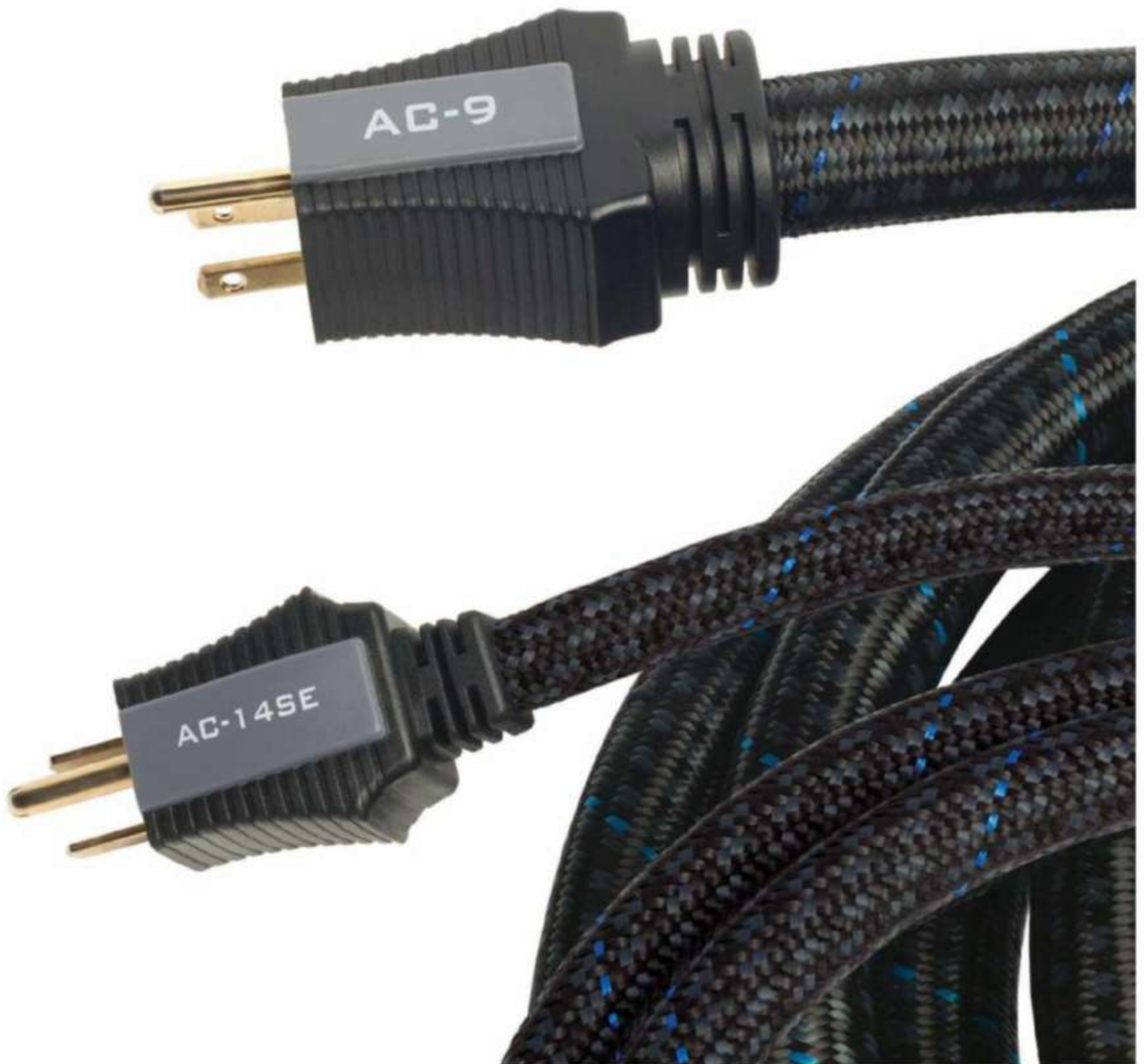
Years earlier, industry veteran, George Cardas, was unhappy with the quality of the copper available for his high-end cables. George decided to make his own copper conductors. His search eventually led him to a small conductor manufacturer in New England that was about to close. George's orders revived the factory, and it's still operating today.

Mined in Arizona, the copper is shipped to New England, where it is melted down and then slowly drawn into conductors using a custom-build Argon gas-filled extrusion machine. Argon gas is used to ensure that no oxygen impurities get into George's copper. The Cardas Grade One Copper is then flown to the Far East, where each Pangea Audio cable is carefully hand made.

George's copper costs a bit more than the Japanese copper Pangea Audio had been using. One listen, however, and Pangea knew the difference was worth it!

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LISTENING BY ART DUDLEY

THIS ISSUE: The Bespoke Audio Company's preamp is said to be passive.

Passive Unaggressive

To paraphrase the playwright Alan Bennett: When I started *Listener* magazine, my idea was to create a small, anarchist journal. But people wouldn't obey the rules.

In 2003, when I began writing for *Stereophile*, I felt very much at home. John Atkinson had one set of rules¹ to ring us in, us being the codependent communities of audio reviewers and audio manufacturers. Martinet that I am, I layered atop those policies a few rules of my own, to govern interactions with members of the industry. More recently, I began to observe an additional practice—I wouldn't quite call it a policy—meant to prevent mismatches, missteps, misunderstandings, and hard feelings all around: When someone offers me a product of a sort for which I have a consistent and automatic dislike, I tell them so. I say, politely, that I'm disinclined to borrow and write about the thing, because I suspect it will mesh with neither my system nor my tastes.

Even then, the supplier may persist. Recently, I was approached by the genial Harry O'Sullivan, of the Bespoke Audio Company: a designer and maker of evidently high-quality passive preamplifiers.² O'Sullivan, whom I'd met in Munich, at the 2014 High End show, hoped I might review one of his products. Yet my prior experiences with passive preamps—which, by definition, lack active electronics, and thus confer on the input signal no voltage gain whatsoever—had left me underwhelmed: Although the best such products bring to the sound of a sympathetic system an extra measure of transparency, they have also seemed to leach from my recordings a measure of musical drive. The latter being more important to me than the former, passive preamps are rare visitors to my home.

My interest was piqued by transformers

Harry O'Sullivan and his business partner, Lucy Gastall, have owned and operated the Bespoke Audio Company since 2013. O'Sullivan also runs a small recording studio, and plays guitar in a couple of different bands; Gastall collects antiques, competes in a rally-prepped 1959 Austin A35, and works part-time at a haberdashery. Both cut their teeth working at Music First Audio, in East Sussex, England: also a manufacturer of passive preamplifiers, also a staunch believer in the suitability, to their products, of hand-wound transformers. In MFA's view, the use of a transformer with multiple output taps is the best non-active approach to signal attenuation, because it offers the opportunity for impedance matching *and* is far less likely than a resistor or potentiometer to add noise or coloration. Further, because it comprises



The Bespoke Audio passive preamp, in basic black

This may be the most tactilely satisfying audio product of my experience.

separate primary and secondary coils, a multi-tapped transformer offers noise rejection as well as the ability to isolate a circuit from ground—this in contrast to an autoformer, which is a single, continuous coil.

Because O'Sullivan used to work in sound reinforcement, he knows a thing or two about impedance matching and noise rejection and the appropriateness of transformers to those tasks. Because Gastall used to make transformers for MFA, she knows a thing or two about what technical qualities separate the good 'uns from the bad 'uns. So when it came time for them to leave MFA, each independently of the other, they met up and began tossing around ideas for a company that would design and manufacture fuel-injection systems for light-duty agricultural tillers.

Just kidding: O'Sullivan and Gastall decided to start making their own transformer-based passive preamplifiers. Theirs is an original idea—a genuinely bespoke passive preamplifier, the connections and cosmetics and other elements of which are selected by the hobbyist for whom it is made—and, as I can now attest, theirs is a well-made product, perhaps peerlessly so in its category.

The Bespoke Audio preamplifier (\$12,000 in its most

¹ This in contrast to those magazines whose reviewing policies appear limited to "Obtain signed advertising contract before committing review to print." For a complete list of our rules, see www.stereophile.com/aswesecit/307aws/index.html.

² Allow me to pause and acknowledge the distress felt by those who object, on technical grounds, to the term *passive preamplifier*. But because we assume the term to be well understood by 99% of our readers, I will carry on.



Fit to be tied: Cotton-insulated wiring within the Bespoke Audio preamp is beautifully dressed.

basic form, with price subject to currency-exchange rates) measures 12" wide by 4.5" high by 13.5" deep, and weighs a chunkarific 31 lbs. Its beautifully machined aluminum alloy casework is available in natural (silver), black nickel, or champagne gold finishes; those options also apply to the preamp's removable top plate, which the user can also have made from burr veneer, clear Perspex acrylic—indeed,

Clarity was sufficiently better through the Bespoke that some lines of notes were simply easier to hear.

the entire case can be made of Perspex, if one desires—or quilted ostrich leather.³

Other elements that can be finished to the buyer's liking include a pair of decorative

metal rings set into the top plate, corresponding with the positions of the two cylindrical transformer covers within; those transformer covers themselves (which, should the buyer choose the Perspex lid, will be eminently visible); decorative rings around the front-mounted volume and source-selection control knobs; and the knobs themselves. Many of those elements can also be engraved. Consider the ring around the source-selection knob: In the preamp's default form, the names of the sources engraved thereon are

"One, Two, Three..."; they can also be made to read "CD, Tuner, Phono Preamp..." or "Good, Better, Best..." or "Flopsy, Mopsy, Cotton-tail..." the limits to one's choices being merely orthographic.

Common to all Bespoke preamps are a six-position source-selection switch and a stepped volume control, the 67.5dB range of the latter divided into 46 discrete positions. The volume control is motorized, for operation via a somewhat smaller-than-average remote handset, built into an alloy case. (Remote control requires use of an outboard power supply—a wall wart—included in the price.) The preamp's rear panel can be equipped with jacks for one to six inputs, and with one or two outputs; those jacks can be RCAs or XLRs—because the Bespoke Audio preamplifier uses transformers, it can easily convert signals from single-ended to balanced, and vice versa—in any combination the buyer wishes. Tucked away on the bottom plate is a miniature toggle switch that allows the user to lift the audio circuitry above

³ I made up the one about quilted ostrich, though I'm sure O'Sullivan and Gastall would do it for you if you really wanted it.

THE CABLE COMPANY *Presents*

Phonophobia Cured.



the chassis ground.

A review sample was sent

My review loaner stopped here on its way to Koby Koranteng, of the New Jersey shop HiFi Logic. Rather than assigning a US distributor, Bespoke Audio intends to establish a number of retailers where prospective customers can hear and see the product prior to ordering from the factory—and HiFi Logic is the first of these. Freed from its sturdy, foam-lined flight case, the Bespoke preamplifier appeared impenetrable, as if its heavy enclosure were held together with magnets or some high-tech adhesive. Still, out of curiosities professional and personal, I wanted to have a look inside, so I asked Harry O'Sullivan how to go about it. Easily done: "We wanted the lid to be removable because we wanted the internal appearance to reflect what we hope is a beautiful exterior—an idea we got from beautiful watches."

O'Sullivan explained that, during the week before a Bespoke preamp is dispatched, he mails to the new owner the "key" to a single, large-headed bolt at the center of the bottom plate. In typical Bespoke fashion, the bolt is fin-

A multi-tapped transformer offers noise rejection as well as the ability to isolate a circuit from ground.

ished in the same color chosen for the preamp's accent rings, and the key is engraved with the customer's name—"as a sneak preview, to whet the appetite," in the words of O'Sullivan, who conceded that a large, flat-bladed screwdriver works just as well. I was impressed that this 3.5"-long, rubber-gasketed bolt, which fastens to a tapped opening on the inner surface of the precisely machined top plate, was beautifully finished, spotlessly clean, and fit with a degree of precision that could only be termed luxurious. A luxurious *bolt*, I tell you!

That wasn't the only thing that impressed me about the Bespoke, whose build quality is unsurpassed in my experience of all things audio. The case's panels are held together



Unambiguously classy: Bespoke's engraved transformer covers are hidden from sight.

with stainless-steel machine screws and interior corner braces, the panels machined in such a way that the braces are nearly invisible. Machined into the inner surface of the bottom plate—the preamp's floor, so to speak—are two curved recesses designed to accommodate the bundles of wires that exit the bottoms of the shielded transformer cases, those cases themselves machined with Bespoke's unambiguously classy

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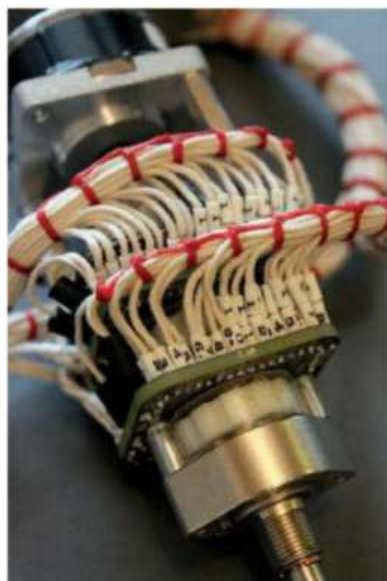
Every square millimeter of the case's interior had the same seamless finish as the exterior. The hand-laced wiring was neatly bundled, and tied to the inside of the case with red-leather straps that looked as if they might have been sliced from the interior of a late-'40s Jaguar. The soldering was the neatest I've seen anywhere—I doubt that even Dick Cheney's pacemaker is built this well—with not one stray speck of flux or solder visible. My favorite touch of all was hidden beneath the Bespoke: four felt feet of generous size and luxuriant thickness. No metal, no polymers—just dense, soft felt. I confess that, on occasion, I nudged the Bespoke preamp this way or that on the shelf of my Box Furniture rack, simply to feel how nicely and easily it slid: This may be the most tactily satisfying audio product of my experience.

I learned that those feet are custom-made for Bespoke by the British Felt Company, of Milton Keynes, Buckinghamshire. (I am happy to live in a world in which there still exists something called the British Felt Company.) The preamplifier's cotton-insulated, 99.99% pure copper wiring is made for Bespoke by the Jupiter Condenser Company, of Hudson, Ohio. And those red leather straps come from the haberdashery where Lucy Gastall works one day a week.

Music was played

Thus informed, enlightened, and enriched, I finally set about giving the non-electronic Bespoke Audio preamplifier a tryout in my decidedly electronic playback system, concentrating on two line-level sources: my Sony SCD-777ES SACD/CD player and my favorite affordable USB D/A converter, the Halide DAC HD.

An alternate version of "Taking the Time," which appears as a bonus track on a reissue of Procol Harum's *Procol's Ninth* (CD, Salvo CD028), has a better, more physical feel than the original version, with a mix that favors B.J. Wilson's kick drum in particular; through either my Shindo Masseto preamp or a borrowed sample of the earlier Shindo Allegro 604 preamp, both that instrument and Gary Brooker's somewhat off-the-cuff singing add to the recording an edge-of-the-seat excitement. But that quality wasn't as evident through the Bespoke—beautifully detailed and realistically color-



Left: a meticulously hand-wired rotary switch.
Right: one of those red leather cable ties.

Each little kettledrum tap in the hushed opening bars could be felt—and each dripped with color.

ful though its sound was. Similarly, "Don't Do It" and "King Harvest (Has Surely Come)," from the CD layer of the Band's *Rock of Ages* (SACD/CD, Capitol/Mobile Fidelity Sound Lab UDSACD 2046), sounded a bit flat: On that record, the only advantage conferred by the passive preamp was that it gave a somewhat better idea of Allen Toussaint's interesting horn arrangement, played behind some verses of "King Harvest." Otherwise, the song had less kick and drive than when played through my active preamp.

And yet: The Bespoke fared better when I used it to enjoy newer, less compressed, less congested pop recordings. (Despite MoFi's considerable efforts, that live Band album, with all its overdubbed guitar solos and other manipulations, remains something of a mess.) The passive preamp did a good job with the percolating organ sounds in "Morning Train," from Lee Feldman's brilliant *I've Forgotten Everything* (CD, Urban Myth UM-114-2), and while the sounds of piano, drums, and electric bass weren't as propulsive as through my Shindo preamp, the results were engaging. Likewise, "The Lazy Projector," from Andrew Bird's *Break It Yourself* (AIFF file ripped from CD, Mom+Pop MP048), sounded sufficiently impactful, the brushed snare drum and twin electric guitars conveying a nice sense of momentum.

I then tried my preferred recording of Wagner's *Lohengrin*, with Rudolf Kempe conducting the Vienna Philharmonic, and the young American Jess Thomas in the title role (3 CDs,

EMI CDS 7 49017 8). I was charmed, at first, by the lovely portrayal of the pianissimo strings in the Prelude to Act I: shimmery, sweet, decidedly pastel—timbral colors were slightly less saturated than through my usual electronics—and pleasantly dry, with really good texture. The Prelude builds in intensity through a series of plateau-like climaxes, the first of which kicks in at about 2:20; all were a little less apparent, and thus a little less dramatic, through the Bespoke than through my Shindo preamp, the one at 5:40 or so being especially bloodless through the passive preamp. On the plus side, those climaxes sounded cleaner than through my own electronics, and spatial performance remained consistently good, irrespective of volume—praise that, in my experience, is rarely earned by an active preamp.

Listening through the Prelude to the beginning of Act I and the entrance of the Herald (Otto Wiener), I heard the same very pleasant lack of strain in voices and horns. Spatial performance remained fine, with a slightly-more-generous-than-average sense of scale, and with good solidity to the images of the solo singers. Again, there was plenty of natural texture in the sounds of voices and reeds and strings—a quality that was even more evident in the solo violin in my top choice for best-sounding CD ever: violinist Marianne Rönne and the ensemble Affetti Musicali performing Biber's *Mystery Sonatas* (Winter & Winter 910 029-2). And that provoked in me a reflexive spasm of thinking: I had often worried,

in secret, that abundant natural texture in the reproduction of recorded music might not be so natural after all, and might in fact be an artifact, a consonant distortion, a deception. Now I suspect differently: That something as unambiguously pure as the Bespoke preamp is so good at texture has enriched my point of view.

After two or three weeks of listening with only line-level sources, I gained an impression that the Bespoke preamplifier was more accomplished than any other passive design of my experience—yet that its mix of strengths and weaknesses nevertheless did not quite align with my own priorities. That impression changed somewhat when I played LPs—which involved, of course, the use of a separate phono preamplifier.

With one pair of its single-ended inputs driven by Leema Acoustics' high-value Essentials phono preamp (\$749; see my review elsewhere in this issue), the Bespoke sang more sweetly, more colorfully, and, above all, more forcefully. That last quality was not limited to *extreme* force: Each little kettledrum tap in the hushed opening bars of Beethoven's Violin Concerto, with soloist Christian Ferras, Herbert von Karajan, and the Berlin Philharmonic (LP, Deutsche Grammophon 139021), could be *felt*—and each dripped with color.

The Bespoke's ability to convey sweetness, color, force, and sheer drive took another giant step forward with the addition of an even better phono preamplifier: a borrowed sample of Shindo Laboratory's Aurieges stand-alone phono stage. Pre-preamplified through the Shindo's mono input—and through its dedicated mono step-up transformer—then winnowed through the Bespoke passive preamp, the Chu Berry Ensemble's recording of "Body and Soul," from *Prez and Chu: Tops on Tenor* (LP, Jazztone J-1218), was meaty, colorful, and compelling. Al Casey's Django-influenced guitar chording, Clyde Hart's piano, and Artie Shapiro's bass were propulsive in the first portion of the song, and even more so in the double-time backing for the incandescent solo by Kansas City trumpeter Oran "Hot Lips" Page (whom the great Stanley Crouch describes as one of "the terrors of the territories"). As is said—prematurely, I'm afraid—when a fighter plane drops a bomb on the 300'-tall creature in the 2008 film *Cloverfield*: "Yeah, *that's* the shit!"

The cure wasn't complete. With the Bespoke handing off the phono-stage output to my Shindo Haut-Brion power amp, I still wasn't getting all the momentum, drive, and musical purposefulness I wanted, as I noticed when I played Sir John Barbirolli and the Philharmonia Orchestra's recording of Elgar's *Enigma Variations* (LP, EMI ASD 548). In that well-regarded record, orchestral swells—especially in the "C.A.E." variation—were clearly more dramatic with an active line stage in the system. Then again, doing away with that active line stage added to the sound quality in another way: Good old-fashioned clarity was sufficiently better through the Bespoke that some lines of notes were simply easier to hear.

In the above-mentioned Leema Essentials review, I remark that outboard phono preamplifiers constitute a relatively new product category, having appeared on the scene a scant few years after the introduction of the Compact Disc. Much the same can be said of the passive preamplifier, the need for which wasn't apparent before the prevalence of domestic playback systems whose source components all had line-level outputs. Nearly 30 years later, both types of product endure, albeit for different reasons. In my admittedly cynical view, now that electronics manufacturers have learned that they can sell to LP-loving audiophiles not just one product but two—a line-level preamp and a phono preamp—those same companies can't be expected to retreat to pre-1986 business strategies. On the other hand, the makers of passive preamplifiers, most of whom appear to specialize in only that category, are on a crusade to do things in their own, different ways. Although I'm unlikely to ever be converted, the Bespoke Audio Company's passive preamplifier offers the best justification yet for the latter approach. I'm awfully glad Harry O'Sullivan convinced me to have a look and a listen. ■

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THE FIFTH ELEMENT

BY JOHN MARKS

THIS ISSUE: Renowned mastering engineer Bob Ludwig and Decca's boxed set of Phase 4 Stereo recordings.

A Conversation with Bob Ludwig

A mastering engineer's job is both to act as the final quality control before a recording goes out for manufacturing and, just as important, to apply to that recording the requisite technical finishing touches. Over the course of his career to date, mastering engineer Robert C. Ludwig has racked up more than 7500 album credits.

Bob Ludwig's recent projects have won eight Grammys in the last three years: in 2013, Album of the Year, for Mumford & Sons' *Babel*; in 2014, Album of the Year and Best-Engineered Album—Non-Classical, for Daft Punk's *Random Access Memories*; also in 2014, Record of the Year for the Daft Punk single "Get Lucky;" and Historical Album of the Year for the Rolling Stones' *Charlie Is My Darling: Ireland 1965*; and in 2015, Album of the Year and Best-Engineered Album—Non-Classical, for Beck's *Morning Phase*, as well as Best Surround-Sound Album, for Beyoncé's *Beyoncé*.

I met Bob in 1991, when he took me on as a new client, to remaster the recording, for John Marks Records, of Arturo Delmonico's *Songs My Mother Taught Me* LP. Bob didn't know me from Adam, but legendary recording engineer David Hancock, who had recorded *Songs*, had asked him to do me a favor.

Hancock was an idiosyncratic iconoclast. He had no use for Dolby noise reduction, and little for condenser microphones. His go-to mikes were Charles Fisher's Cambridge C35 ribbons (US Patent 3,435,143), most famously



Bob Ludwig's recent projects have won eight Grammys in the last three years.

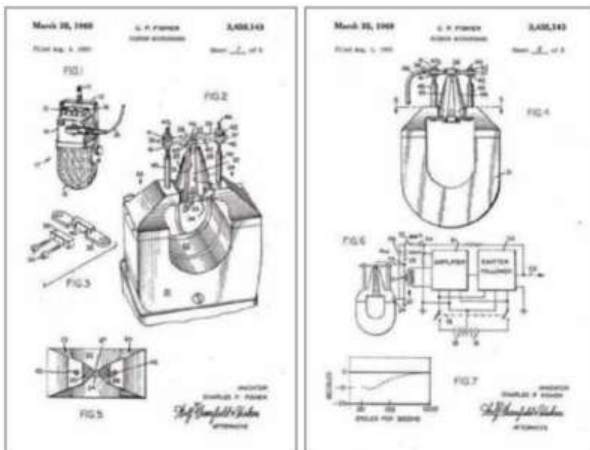
used by Hancock in Donald Johanos and the Dallas Symphony's 1967 recording of Rachmaninoff's *Symphonic Dances*, among the most frequently remastered and reissued of all audiophile orchestral recordings.

Hancock devised his own steady-state, asymmetrical system of noise reduction for recording and playing analog tape, which the

liner notes for the original Vox LP of *Symphonic Dances* described as "a specially developed constant-velocity recording curve...for improved signal-to-noise ratio." I have no idea what that means.¹

When, in 1982, Hancock recorded *Songs My Mother Taught Me*, he was using a beautiful new Studer A80—a 30ips, 1/2", two-track analog tape recorder. Problem was, proper playback of David's master tapes required a nonstandard equalization curve. Bob Ludwig was one of the few engineers—if not the only one—to have the proper calibration tape, which is used to ensure correct level and equalization prior to mastering. (I've always thought that both the North Star LP release of *Songs My Mother Taught Me* and Mobile Fidelity Sound Lab's CD release were not quite right: Both struck

¹ David increased the amount of high-frequency pre-emphasis while recording and turned it down for the playback, thus further increasing the inherent noise reduction—but at the expense of greater susceptibility of high-frequency saturation. While that is usually not a problem for classical music, it is always a problem for pop music. —Bob Ludwig



Patent drawings for the ultra-rare 1960s Cambridge C35 ribbon microphone.

me as veiled—in detail, dynamics, and high frequencies.)

Listening to the master tapes of *Songs My Mother Taught Me* played through Ludwig's Duntech Sovereign 2001 speakers while watching him manually adjust the groove spacing was a heady experience for me, as it would have been for any audiophile. (Bob enjoyed the music, too; he thinks Arturo is a gifted artist.) Bob and I then worked together on a dozen or so other JMR projects.

I asked Bob to answer some questions, not because of his recent hot streak at the Grammys, but because of his broad musical training and knowledge, and his eminent position in an industry undergoing radical transformation. Bob's education included training as a trumpeter (he was first chair in a professional orchestra), a music teacher, and a music librarian.

John Marks: *In interviews about his work as the host of the New York Philharmonic's radio and Internet broadcasts, Alec Baldwin has said he thinks there's an age cutoff for being able to embrace the worldview of Gustav Mahler's great works. Baldwin thinks that most young people haven't gotten over enough of life's setbacks and disappointments*

for Mahler to make sense to them.

You recently told me that hearing tenor Jonas Kaufmann's performance in the title role of Wagner's Parsifal at the Metropolitan Opera transfixed you and your daughter. You e-mailed, to me and others, "Parsifal, if any of you don't know it, is one of the supreme achievements by a human; Mahler spoke of measuring his life as 'before Parsifal, and after Parsifal.'"

Do you think there's an age cutoff for entering the world of Parsifal?

Bob Ludwig: I don't think there is an age cutoff for any music. However, people have different temperaments and formative experiences. Any high school student can read the words that make up *Huckleberry Finn* or *The Great Gatsby*, but I think you need some adult experiences before great art can have its full impact. But the fact that I basically agree with Alec Baldwin does not mean I think that a high-school or college-age person won't get quite a lot out of *Parsifal*, or Mahler.

I think more important than Mr. Baldwin's "age cutoff" is the need for music education. While it is possible for anyone to be immediately attracted to it, it's doubtful that a musically uneducated person would discover the

mind-bending glories of an 80-minute raga, let alone something like Morton Feldman's String Quartet 2 (five to six hours long), which I hold as one of my supreme concert-music experiences.

JM: *You're right—but young people do sit through very long movie adaptations of J.R.R. Tolkien's works, and they read very long novels that come out in multivolume series—Harry Potter, The Twilight Saga vampire books, The Hunger Games, etc. So I think the challenges that high culture faces today aren't simply a matter of attention span.*

I don't despair about the future of high culture. However, in my work as a library volunteer, I recently chatted with a young man who had no idea who Louis Armstrong was (an Armstrong CD was playing in the library's boom box), and thus no idea why Armstrong was culturally important. That tells me that some very important balls are being dropped. What is the future of musical cultural literacy in America?

BL: One of my degrees is in music education, so hearing that any American is unaware of the genius and importance of Louis Armstrong makes me sad. Armstrong is the wellspring of America's own music, jazz. I think it is important that all the diverse people who make up a nation should hold a



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cultural legacy as a common inheritance. As music lovers, I think it is important to try to share our enthusiasm with others to help prod their own musical interests.

JM: I was really taken aback by "The Shazam Effect," an article by Derek Thompson in the December 2014 issue of *The Atlantic Monthly*.² Thompson pointed out that Shazam [a smartphone app used to sample and identify unfamiliar recordings] does a lot more than provide song titles to its users. Shazam also harvests data about where you heard the song, and so on. The article linked that two-way exchange of data to the narrowing of musical styles: Now that the music business has unprecedented information about what people like, it wants to deliver more of the same.

The irony is that today's technology can deliver nearly unlimited variety, but what people ask for is increasingly—and unprecedentedly—similar. Recent research indicates that 77% of the total revenue from sales of recorded music goes to the top 1% of artists and bands. Further, today's 10 best-selling tracks have 82% more market share than did the Top 10 singles of 10 years ago.

A massive study by the Spanish National Research Council concluded that, compared to decades going back to the 1950s, the music

"The music industry has always been supported by 'the 1%.'"

—BOB LUDWIG

of the decade just ended exhibited the smallest variety of pitch transitions within songs. Does that sound about right to you?

BL: The music industry has always been supported by "the 1%," and just like other popular culture (movies and books), when someone has a hit, everyone else wants to sell the same thing!

A decade ago, when people were forced to buy albums by the record companies, at least they were also exposed to other tracks where a band "stretched out" and explored the boundaries of their genre. Now, when people only purchase or are exposed to the "hit singles," they never hear anything but the same old formula, over and over again, and they love it because it is so familiar—which is all fine.

JM: When I first worked with you, in 1991 in New York City, your monitoring loudspeakers were Duntech's Sovereign 2001s. You took those with you when you relocated to Portland, Maine. You kept them

for a while, until you replaced them with EgglestonWorks Ivys. Have you ever been tempted to replace the Ivys?

BL: I haven't yet heard anything I prefer, so: "No." The Ivys I have carry serial numbers 1 and 2. They were developed by William Eggleston III. The loudspeakers' crossovers were custom tweaked in my studio, and William put a special dope on the midrange drivers while he was here. My set still has the full complement of 23 drivers per side he originally specified. I drive the Ivys with Cello Performance II amplifiers. Those can deliver 3200W into 2 ohms with double [their normal] slew rate, as they are a bridged set.

The "marriage, with no chance of divorce" is between the monitoring speakers and the control room. My room was conceptually designed by Dr. Peter D'Antonio, of RPG Diffusor Systems. Peter is a Fellow of the Acoustical Society of America. The shape of the large, 30' by 23' by 20'-high room was based on Loudon ratios, for the fewest room-node issues.

I greatly admire the large Wilson Audio and Rockport Technologies

² See www.tinyurl.com/shazameffect.

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loudspeakers, but I still feel my Ivys best meet my personal needs.

JM: For three years in a row, a project of yours has received a Grammy for Album of the Year. However, what I'd like you to do is to list a few of the projects you remember most fondly that, for one reason or another, did not win Album of the Year. As an example, I think that Elvis Costello's *All This Useless Beauty* (1996; CD, Warner Bros. 46198-2) is some of his finest work. I also think the album's production values, which change from song to song, are a great example of the engineering's really being part of the musical art.

BL: *All This Useless Beauty* is a perfect example. Geoff Emerick (the Beatles' engineer) did such a great job on it that it was all I could do to keep out of his way and make the best transfer I could. We have seven different kinds of tape-machine playback electronics at the studio, and not one of them sounds exactly like any other. So that was a case of merely choosing the best electronics, and that was the "mastering."

Captain Beefheart's *Bat Chain Puller* [CD, VAULTernative VR2012-1] is an acquired taste, but once I am immersed in it, I never want to hear anything else. My 40th-anniversary (2014) remastering of Elton John's *Goodbye Yellow Brick Road* [2 CDs, Island Mercury 3758589] is very fresh sounding. It's so hard to pick a few, but: the ABKCO Stones catalog, all the Queen remasters, and all of Bruce Springsteen's work. Others: *Esto Es Vida*, by Draco Rosa [CD, Sony Music Latin 378988]; *The Whole Love*, by Wilco [CD, Anti- 87174]; *Sound & Color*, by Alabama Shakes [CD, ATO 226725]; *Bass & Mandolin*, by Chris Thile & Edgar Meyer [CD, Nonesuch 544735]; *Blunderbuss*, by Jack White [CD, Third Man 95993]; and *The Civil Wars*, by The Civil Wars [CD, Sensibil-ity 88883738502].

Lots of great music didn't win "Album of the Year"!!!

JM: Now, the flip side of that question—and perhaps it's an unfair one: Of the household-name albums, the gold and platinum sellers you were mastering engineer for, which are your favorites for purely musical reasons? The household-name album from your back catalog that, with due respect to everything else, never fails to pull me into its musical orbit is *Roxy Music's Avalon* (CD, Virgin 5838712). And I revere Dawn Upshaw's recording of *Górecki's Symphony 3*, *Symphony of Sorrowful Songs*, with David Zinman and the London Sinfonietta (CD, Nonesuch 79282)—but there's a limit to how

frequently I can listen to it. It's rather sad!

BL: I've been privileged to work with Steve Reich on almost all of his Nonesuch releases. I love his music. *Radio Rewrite* is amazing; it's Reich's first work based on Western pop music—Radiohead, in fact [with Alan Pierson conducting the ensemble Alarm Will Sound; CD, Nonesuch 543123-2].

I'm a huge Elliott Carter fan. I love the many recordings I mastered for Nonesuch, especially the String Quartets 1 and 2 [with the Composers String Quartet; CD, Nonesuch 71249], and the Double Concerto for piano, harpsichord, and two chamber orchestras [with Paul Jacobs, harpsichord; Gilbert Kalish, piano; and Arthur Weisberg conducting the Contemporary Chamber Ensemble; 4 CDs, Nonesuch 510893-2].

The amazing George Crumb: *Ancient Voices of Children* [with Michael Dash, boy soprano; Jan DeGaetani,

mezzo-soprano; Arthur Weisberg, Contemporary Chamber Ensemble; CD, Nonesuch 79149].

Gilbert Kalish's Charles Ives "Concord" Sonata is, regrettably, out of print; there is only one movement in the Teresa Sterne legacy boxed set. I also am especially impressed by the "Concord" I recently recorded and mastered, by Martin Perry [CD, Bridge 9390]. That's the world's first recording of John Kirkpatrick's final performing edition [1986]—check it out!

Others: Foo Fighters, *The Colour and the Shape* [CD, Sony 35130]; Pearl Jam, *Vitalogy* [CD, Epic 66900] and *No Code* [CD, Epic 4844482]; Radiohead, *In Rainbows* [CD, XL 60001]; Rage Against the Machine, *Rage Against the Machine* [CD, Sony BMG 503775].

And very dear to me is my 2012 remastering of Frank Zappa's *Sheik Yerbouti* [CD, Zappa ZR 3859].

JM: Thanks, Bob!

DECCA PHASE 4 STEREO RECONSIDERED

PHASE 4 STEREO: STEREO CONCERT SERIES

Decca 002188302 (41 CDs).
Limited edition boxed set.



The publicity for this cube of music calls it "A comprehensive 40 CD overview of some of the most sonically-spectacular albums ever made, from a period when Decca enjoyed a clear technological lead over its competitors."

That last bit is debatable. I think the categories in which Phase 4 led the field were album-cover art, fortuitous timing, gadgetry, and hype. Having a greater number of bright, shiny gadgets than the next guy doesn't necessarily make for a "technological lead," let alone a "clear" one.

Admittedly, back in their day (1961–1979), Phase 4 LPs stood out from the crowd of traditionally engineered classical LPs for their extreme—therefore unnatural—stereo separation, and their spotlighting of individual orchestral instruments. The Phase 4 recording system used a 20-channel mixer of

Decca's own design to mix that many microphones to four-channel multi-track analog tape. They then balanced and mixed down the four-channel tape to the two-channel tape used as the master to cut the lacquers for release on stereo LP.

Back then, I wasn't all that sophisticated an audio listener by today's standards. My equipment was respectable: Marantz turntable, Audio-Technica cartridge, Japanese receiver, Fried Q/2 speakers. But my loudspeaker setup—on stands, nearly against the wall, with no toe-in—was more a matter of convenience than a search for the best soundstage.

The Phase 4 recordings of Mussorg-



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sky's *Pictures at an Exhibition* (Leopold Stokowski, New Philharmonia) and Dvorák's Symphony 9 (Antal Doráti, New Philharmonia) were among my favorite orchestral LPs. But even then, I thought that certain Deutsche Grammophon LPs, such as William Steinberg and the Boston Symphony's recording of Holst's *The Planets*—and especially Rafael Kubelik and the Bavarian RSO's collection of Dvorák tone poems—had higher resolution, lower noise floors, and just plain more natural sound.

I think that, similarly, EMI was achieving better sound with less gadgetry (but also less to crow to the unwary about). Three EMI LPs of the era that sounded to me more natural than the average Phase 4 release were Elgar's Cello Concerto (Paul Tortelier, Sir Adrian Boult, London Philharmonic), and two works by Vaughan Williams: *Fantasia on a Theme by Thomas Tallis* (Boult, LPO), and *Oxford Elegy* (Sir David Willcocks, King's College Choir).

Today, I attribute many of the differences I then heard to the cumulative effect of the number of components and connections that each recorded sound had to pass through. Would you rather put up with the unavoidable noise and coloration of three 1960s-vintage mike preamps, or of 20? That said, many Phase 4 recordings remain treasurable for their performances.

Counting conductors, the *Stereo Concert Series* cube contains nine CDs led by Stokowski; five by Stanley Black; four by Doráti; three by Arthur Fiedler; two each by Bernard Herrmann, Henry Lewis, and Charles Munch; and one each by Major Rodney Bashford, Edward Downes, Anatole Fistoulari, Jean Fournet, Elgar Howarth, Erich Leinsdorf, Lorin Maazel, Eric Rogers, Miklós Rósz, and Robert Sharples.

There are also two solo programs: Paco Peña and his flamenco group, and pianist Ilana Vered in a CD compiled from her LP releases of Beethoven's Sonata 21, Op.53, "Waldstein"; Schubert's Fantasy in C, D.760, "Wanderer"; and Stravinsky's Three Movements from *Petrushka*. Any way you slice it, it's a lot of music.

The presentation is a bit quirky. There's a good introduction to the history of Phase 4, and good discographic credits for each session. Each CD is in a miniature LP cover, but most CDs also include an entire additional LP's worth of music: Trying to read liner

notes in miniature—and for only half the works on each disc—is a bit frustrating. Also, the CDs look like little 45rpm discs—why? Bueller? Bueller?

I can imagine this box delighting the right listener—most likely one who was a hi-fi hobbyist in the 1960s or '70s. However, I can't recommend it to everyone, because its virtue of providing a fair representation of Phase 4 Stereo's classical and classical-ish catalog is also its vice: The set presents works of genuine art side by side with kitsch.

Still, two of these discs contain my longtime personal reference performances of the works in question:

**Back in their day,
Phase 4 LPs stood out
from the crowd for
their extreme—
therefore unnatural—
stereo separation.**

Doráti's of Dvorák's Symphony 9, and Stokowski's uniquely amped-up orchestration of Mussorgsky's *Pictures*. More good news: Stokowski's *Scheherazade* is one that deep-catalog classical collectors will want to have. The same holds true for the Charles Munch selections, and for Leinsdorf's recording of Mahler's Symphony 1. Ivan Davis's recordings with the Royal Philharmonic of Liszt's Piano Concertos 1 and 2 (Edward Downes, conductor) and Rachmaninoff's Concerto 2 (Henry Lewis) more than earn their keep. All to the good.

Ilana Vered's solo recital? There's good news and bad news: great playing—but on a piano that did not belong in a recording studio in its then-state of repair. It sounds *thunky* to me, albeit in tune. Paco Peña's flamenco disc, recorded live in the studio, must have been quite an event had you been there, but it's not the kind of music I listen to a lot.

For me, these 41 discs fell out in a bell-curve distribution. The top third definitely held my interest; the middle third were okay to listen to; the bottom third—including the battle-reenactment bonus CD, *Battle Stereo*—had me asking, "What were they thinking?" I'd never before sat down and listened to Albert William Ketèlbey's *In a Monastery Garden*; my listening notes ask whether it's "the Anglo-Catholic

version of the Mystic Moods Orchestra's *Stormy Weekend*." Ewww-kay!

"What were they thinking?" is also what I thought about Sean Connery's bizarre narration of Prokofiev's *Peter and the Wolf*, and Ilana Vered's performance of Xinghai Xian's *Yellow River Concerto*. That said, Vered's Phase 4 recording of Mozart's Piano Concerto 21, with Lawrence Foster and the Royal Philharmonic, is unimpeachable.

There are lots of ballet scores, orchestral dances, and film scores, as well as song recitals by Eileen Farrell and by Robert Merrill. Some of the ballet performances have never been available (or not in complete form) on CD in the US, and the film scores are conducted by their composers. I get all that.

But, unlike the sets from Archiv Produktion and L'Oiseau-Lyre, from which I think almost anyone would gain a lot, this mixed box accurately reflects both the love-it-or-hate-it aspect of Phase 4's programming and the reasons for the series' remarkable commercial success.

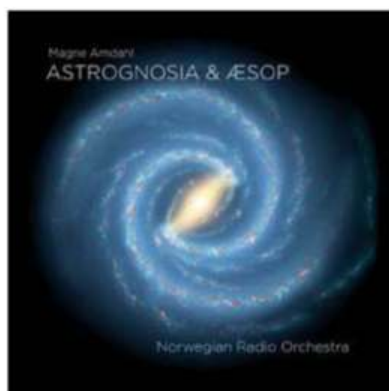
Now, when can we have SACD reissues of the Mystic Moods Orchestra's complete oeuvre? Paul Mauriat's "Love Is Blue," with a thunderstorm mixed in—I can hear it now...

...AND UPDATED

The crowd-pleasing spirit of Decca's Phase 4 "stereo spectaculars" lives on in a new release from Norway's 2L label: *Astrognosia* (Knowledge of the Stars), a 1991 orchestral suite by Magne Amdahl (b. 1942), paired with *Aesop*: Amdahl's settings, for narrator and orchestra, of fables by Aesop. They're available in a two-disc set that includes both an SACD/CD and a Pure Audio Blu-ray disc (2L 2L-111-SABD), as well as a 24-bit/352.8kHz album-only download from HDtracks, and as MP3s from Amazon and iTunes.

Astrognosia is cleverly constructed, with a *Prelude* introducing the moon, followed by the four astrological houses of three zodiacal signs each; Interludes between the houses represent the phases of the moon. *Pavane for the Moon* is the other bookend, for a total of 17 brief movements spanning 28 minutes.

Astrognosia is a whole bunch of good, clean fun. The *Prelude* tells the whole story—the music is big-screen cinematic, with brass and percussion accents and sweeping strings that give a nostalgic World of Tomorrow feel. It immediately made me think of *Fantastica*, Russ Garcia's genre-defining



I hope that boxed sets at fire-sale prices haven't so spoiled us that we're too stingy to support worthy new recordings.

1959 LP of atomic-age/outer-space bachelor-pad music.³ The obvious orchestral comparison is to Holst's *The Planets*, but there's a lilting, slyly archaic feel to Amdahl's music that also calls to mind Arthur Bliss's *A Colour Symphony* (1922), and perhaps even the Respighi of *Ancient Airs and Dances*. (Bliss composed *A Colour Symphony* under the supervision of his teacher Vaughan Williams; if you haven't heard it, grab a copy.) Speaking of *Phase 4 Stereo*, *Astrognesia's* brassy, dynamic orchestrations also call to mind Stokowski's reimagining of *Pictures at an Exhibition*.

Astrognesia features the Norwegian Radio Orchestra conducted by Ingar Bergby, with Dennis Storhøi narrating *Æsop* in Norse. Made in the Jar Church, Norway, this is a fantastic recording that should immediately be drafted into service as audio-show demo material. Highly recommended, despite the high price (\$34.99 list) and what may be the limited appeal of *Æsop* outside Norway. But I hope that boxed sets at fire-sale prices haven't so spoiled us that we're too stingy to support worthy new recordings. ■

John Marks (john.marks@sorc.com) loves pausing to listen.

³ Russ Garcia was a student of Mario Castelnuovo-Tedesco's and a serious composer. When John Atkinson was working as a full-time musician in the 1970s, he relied on Garcia's orchestration handbook for arranging gigs. The book is still in print; JA still has his copy. However, Garcia is probably most famous as the arranger and conductor of Louis Armstrong and Ella Fitzgerald's recording of the Gershwin's *Porgy and Bess*. Listen to *Fantastica* at www.tinyurl.com/garcia-fantastica, or streaming on Tidal.



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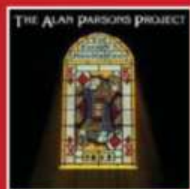


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GRAMOPHONE DREAMS

BY HERBERT REICHERT

THIS ISSUE: Herb listens to phono preamps from Schiit Audio and Blue Horizon Ideas.

Notes from a smoky basement

I used to get invited to these highly secret audio soirées, held in a basement workshop at the end of a dark, garbage-filled alley in Manhattan's Chinatown. There was no street address—only a wire-glass window in a metal door—and if you didn't know the password (*ie*, if you weren't carrying some type of audio amplification), you weren't allowed to enter. That said, sometimes nonmembers were allowed to attend, but only when a member needed help carrying monoblocks: There was no parking nearby.

Inside, the air was white with cigarette smoke. Green tea and sake were served in clear plastic cups, and there were steamed buns for the hungry. Along one wall was a heavy wooden workbench with an iron vise and a row of turntables. Above it was a shelf filled with cartridge boxes, moving-coil step-up transformers, home-brew phono preamps, and Brüel & Kjaer test gear. The loudspeakers du jour sat on milk crates next to steel posts; amplifiers rested on wooden planks straddling cement blocks. Chattering visitors sat on folding chairs and upside-down joint-compound cans, waiting patiently for each attendee to connect his or her amp to the loudspeakers. There were two regular female members. One we called Firecracker—she was Japanese, and built tiny, single-ended amps using old radio transformers. The other we called Mr. Stacey. She was probably the best amp designer of the bunch.

Some people brought amps they made and others brought amps they bought, new or vintage; each affiliate of this secret society was allowed 30 minutes to make a “concert demonstration” of his or her amp. The one piece of this smoky-room gear that rarely changed, and which everyone

admired, was a tubed phono stage built by my friend, the late Arthur Loesch, and inspired by Mike Moffat, founder of Theta Digital and Theta Digital, and co-founder of Schiit Audio.

The Loesch preamp used three high-transconductance Western Electric 417A single-triode tubes per channel. Each of those three gain stages had its own separate power transformer and choke-filtered power supplies (one for the heater, another for the B+). The three active stages loaded—and isolated—two stages of passive RIAA filtering. The

Mike Moffat pioneered and championed the use of low-microphonic, high-transconductance tubes.

Loesch-Moffat preamp was almost a religion at the Smoky Basement Club, as was the Theta X6 preamp on which it was modeled.

Back in the 1980s, Moffat pioneered and championed the use of low-microphonic, high-transconductance tubes such as the 6DJ8/6922. (In properly designed circuits, such tubes can deliver more color, detail, texture, and apparent transient speed than the 12AX7/12AU7s.) At that time, the use of two-stage phono equalization was also new—and the Smoky Basement Club believed that Moffat's two-stage passive RIAA strategy was sonically superior to the more conventional active-feedback approach, and to RCA's single-stage passive method of achieving phono equalization.

SCHIIT AUDIO MANI PHONO STAGE

As you might imagine, the Smoky Basement Club had many subjects, each devoted to the worship of a different pantheon of audio-design idols. One of those subjects venerated Susuma Sakuma, a Japanese man who makes only transformer-coupled mono amplifiers and listens to each with only one loudspeaker, using a Denon DL-102 mono cartridge. Prayerfully, his followers still call him Sakuma-san. In his audio-design treatise, “Farewell to Theory,” Sakuma-san declared: “I need non-analytical tone in reproduced sound. I aspire to Rembrandt's interplay of light and shadow, to evoke memories both happy and sad.” To me, this is a perfect description of the virtues of Schiit Audio's Mani phono stage (\$129).

The Schiit Mani is a new design by the audio-cult luminary Mike Moffat—and it appears to be a direct descendant of the Theta X6. The Mani, made entirely in the US, has circuitry similar to Moffat's original, but instead of 6DJ8 tubes it uses as gain stages Analog Devices' ADA4897 and AD8066 high-speed op-amps. The Mani is a true mini, measuring only 5" wide by 1.25" high by 3.5" deep and



Top: The artistically refined Schiit Mani, at ease. **Bottom:** The ins and outs of the Mani's rear panel.

weighing just a pound, with switchable gain (42, 47, or 59dB) for moving-magnet or moving-coil cartridges, and switchable cartridge loading (47 ohms or 47k ohms) via tiny, fragile, plastic DIP switches on its bottom. The Mani is powered by a wall wart, and its interior looks almost empty. On the rear panel are twin inputs and outputs (RCA), a ground-wire terminal, an on/off switch, and a 16V DC input jack. It comes with a five-year warranty and a 15-day money-back guarantee.

In my system, the Mani presented music with the exact types of rich tones and palpable textures pioneered by the 17th-century Dutch Master Rembrandt van Rijn. It also presented music with a kind of semicrystalline Baroque tenorism. It threw a wide, deep, detailed soundstage that tended to get shadowy as it reached its outer limits—but in a colorful, Rembrandt-esque sort of way.

The Schiit Mani showed me the non-analytical side of every cartridge I used with it. This is not to say the Mani's sound was soft or warm or rolled off, because it wasn't. Neither did it sound hard or cold. It always played with sufficient detail and fine clarity. The Zu Denon DL-103

cartridge was my favorite match, because the Mani pretty much eliminated the ever-present "moving-coil-ness"—the lack of suppleness and ease and the slight metallic tinge—that otherwise accompanies the DL-103's rising top end. The Sound-smith's Carmen moving-iron (MI) cartridge was less of a good match: The Carmen's relaxed, slightly shadowy sound was exaggerated by the Mani's own slight tendency in those directions.

What the Mani really liked were my Grado ME+ Mono (MI) and Shure SC35C (MM) cartridges. It made both sound more textured and colorful. The Mani made the Shure seem less didactic and insistent, more relaxed and three-dimensional. The Schiit stage also loved such superfast MC cartridges as the Jasmine Turtle, whose Decca-like speed complemented extremely well the Mani's tendency toward a yin sound: seductive, feminine, tonally a tiny shade darker than neutral. There was something very self-satisfied and assured about the way the Schiit phono



The Schiit Mani's interior: neat, red, and roomy.

stage presented music. The Mani always gave me pleasure, because I felt it was delivering nearly everything the grooves had to offer. It danced and sang and offered high praise to the goddesses Edith, Nina, and Janis. It never disappointed me, or caused me to worry about how a chosen disc was going to sound.

If you're an old or a new collector of vinyl (I am both) with an interest in discovering just how much pleasurable information and painterly art remain hidden in your LPs' grooves, I guarantee that the Schiit Audio Mani will please you for a very long time.

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BLUE HORIZON IDEAS PROFONO PHONO STAGE

The Profono phono stage (\$1299) was designed and built in Winchester, England, by luminary-to-be Keith Martin, founder of Blue Horizon Ideas, Ltd. The city of Winchester, originally built by the Romans, is famous for its long cathedral and its castle, the latter of which houses the Winchester Round Table, linked to Arthurian legend. I tend to fancy audio components built in medieval guild towns by long-haired craftsman working with solder at wooden benches.

Measuring 6.6" wide by 2.7" high by 4.3" deep, the Profono is at least twice as big as the pocket-size Schiit Mani. It offers similar user-selectable gain settings (41, 50, and 61dB) for MM and MC cartridges. Besides its size and price, the Profono also differs from the Mani in how the user chooses cartridge loads: The Mani's little DIP switches offer only 47 ohms and 47k ohms, but the Profono comes with three pairs of gold-plated RCA plugs containing shunt resistors, to be used in parallel with the standard 47k ohm input load. Thus the user can choose from loads of 47k ohms (no shunt resistor, good

for most MM and MI cartridges), 100 ohms (perfect for my Ortofon Mono CG25 Di, Denon DL-103, and most MCs), 470 ohms (also good for the Denon DL-103), and 1000 ohms. At no charge, Blue Horizon will make up additional custom load plugs for any value the user requires.

Compared to the Schiit Mani's yin, the Blue Horizon Profono's sound was conspicuously yang: bright, practical, masculine. Switching from the Schiit to the Blue Horizon was like traveling from 17th-century Baroque Holland to 18th-century Enlightenment England: In contrast to the Mani's romantic leanings, the Profono presented music with neoclassical precision. There were no shadows at the edges of the soundstage, and images within the soundstage were drawn with a sharp-nibbed pen. Unfortunately, the Profono made the Denon DL-103 and Jasmine Turtle MCs sound a bit *more* "moving-coil" than I would prefer. But it made the luxurious Soundsmith Carmen MI sound enjoyably more alive and sunny than Soundsmith's own MMP3 moving-magnet stage (\$649).

For many months now, the Profono

and Carmen have comprised my reference LP front end, and in my system(s), the combo has felt extremely well poised in a classic balance of yin and yang. The Profono helped me fall in love with the Miyajima Spirit and Miyabi mono cartridges, allowing them to be no more and no less than what they both are: meaty, chunky, well-textured, corporeal. What I most appreciate about the Profono is how it always delivered the forward momentum of brisk, high-spirited walking. It also excelled at what I call voice articulation: Male voices, especially, had textbook elocution and positive masculine clarity. (Voice articulation is one of the things that vintage Western Electric gear is all about!) Off-mike audience applause and chatter were less muddy than with most phono stages.

If you're a card-carrying audiophile with a desire to explore the upwardly mobile reaches of high-resolution phonography—*ie*, sound quality beyond that provided by the phono stages included in most integrated amplifiers—I promise that you will be happy with the sound quality and flexibility of the Profono from Blue Horizon Ideas.

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The Jensen Iso-Max® CI-2RR stereo audio ground loop eliminator received the prestigious CEDIA Electronic Lifestyles® Product award as a significant contributor to the advancement of the home theater install industry.

Having Fun with Digital



If you have been following the wonderful world of high-performance audio, you've most likely been exposed to the controversies surrounding all audio cables, and digital-audio cables in particular. At this very moment, chances are that some well-intentioned but ill-informed tech site is slicing up one of our Vodka cables in a futile attempt at "expose." Let them have their fun.

Ethernet, Thunderbolt, USB, HDMI, and Toslink—all benefit from careful application of high-quality materials and thoughtful design, allowing digital music to flow with the same dynamic contrast, tonal color, and natural senses of timing and touch that make analog music so emotionally compelling.

Don't take our word for it.

"With the AQ cables in place...clarity improved. Noise-floor dropped. Images became closer-to-3D."

—Scot Hull, parttimeaudiophile.com

"...the Vodka [Ethernet cable] seemed to remove a layer of film for superior textural reveal."

—John Darko, digitalaudioreview.net

"You get an increasingly large sound picture as you move up the line, greater differentiation between sonic elements, and a greater sense of clarity."

—Michael Lavorgna, audiostream.com

But, most importantly, listen for yourself.

If you haven't already taken the plunge, you might begin with one of our Toslink cables. They can be used to enhance the performance of your TV, gaming console, media player, laptop, and any number of popular electronic devices.

Besides, you'll need one to take full advantage of your new Beetle DAC.

Who's having all the fun now?

audioquest

||| GRAMOPHONE DREAMS

Herb loves...

In my experience, even the most expensive systems sound more like clock radios than a full orchestra or the Rolling Stones at Giants Stadium. *But!* Even small differences in the sound of hi-fi gear can have big effects on our ability to understand and enjoy our recordings. Therefore, it is essential for each of us to spend quality time listening to, pondering about, and self-consciously *appreciating* recorded music. In order to condition our humanity and our audiographic memory and taste, we must do this mindfully, so that we can become our own connoisseurs of audiophile-quality music playback. The well-designed Schiit Audio Mani and Blue Horizon Ideas Profono phono preamplifiers should be thought of as superior-quality, high-value *tools* capable of guiding us toward a deeper understanding of our black discs.

Mr. Stacey

Just as I was finally hunkering down to write about the Schiit Audio Mani and the Blue Horizon Ideas Profono, I got a strange blast-from-the-past phone call from an "unknown" number. It was the mysterious, long-lost Mr. Stacey, of the Smoky Basement Club. She'd just finished building a new tubed phono preamp and wanted to come over and listen to it with me—*right now*. I explained that I was a shut-in and never got out of my pajamas: She paid no attention. An hour later, Mr. Stacey and her three "design collaborators" were unplugging everything in my system and installing her two-box prototype. I sat by, silent, tired, and annoyed.

As I chatted away on Facebook, Mr. Stacey lowered my Pioneer PLX-1000's tonearm, with Ortofon 2M Black cartridge, onto the lead-in groove of the first album they saw: Tommy Makem and the Clancy Brothers' *A Spontaneous Performance Recording!* (Columbia CS 8448), made in 1961 at Columbia's vast 30th Street Studios. My room filled up with the sound of Makem and the Clancys performing the famous and jiggy "Tim Finnegan's Wake" in front of 200 of their shouting, foot-stomping friends.

Moments later, I was choked up and speechless. What the hay? How could this be? This live recording



Top: The Blue Horizon Ideas Profono. **Bottom:** A topless Profono flashes its chips. **Opposite page:** Sockets on the left accept resistor plugs, for changing load impedance.

seemed way more *live* than I had heard *any* record sound. *Ever*. I felt as if I could measure the 14" between the mike and Pete Seeger's banjo. All the weird, cloudy, jittery "cartridge noises" I'd become completely used to had vanished. I could smell Makem's breath. I remembered Liam Clancy's words: "Ireland was Ireland when England was a pup, / and Ireland will be Ireland when England's time is up." I sat in complete awe of the spellbinding sound quality. No question: This was the best, most revealing, most sonically complete, most rich, most staggeringly tactile, nothing-left-out-but-the-cartridge-noises LP reproduction I had ever experienced anywhere, anytime, at any price. My best description of how good this LP sounded: If I removed that budget Pioneer tonearm and modest Ortofon cartridge and replaced them with an old toothbrush hanging on a string, it would *still* be the best gramophone reproduction this irate shut-in had ever experienced. And everyone in the room agreed.

We played at least a dozen records on my Thorens TD 124 with the Abis SA1.2 arm and Zu DL-103, and every one made me think: *I guess it doesn't matter which cartridge, tonearm, turntable, amp, or speakers you have; all you need is a killer phono stage.* Is that possible? I used to think the table, arm, and cartridge—maybe even the stylus profile—were the heart, breath, and soul of any great



stereo system. But suddenly I'm wondering, *Maybe it's the phono stage...*?

I asked Mr. Stacey if her preamp was for sale.

"Not yet."

"How much do you think it will cost?"

"It is a silver-wired, transformer-coupled, ultra-high-transconductance tube design with passive resistor-inductor (no capacitors) RIAA and 14 totally separate power supplies. It would have to be at least \$40,000!" In fact, Mr. Stacey's preamp was an all-out mash-up variation on and evolution of the split-passive RIAA strategy Mike Moffat invented, and of the iron-nickel-core transformer-plus-inductor approach favored by Sakuma-san—influences Mr. Stacey would be the first to acknowledge.

Mr. Stacey and her collaborators left me audio drunk and staggering, wires hanging everywhere. When my system was back in order, I played the Clancy Brothers LP again, first via the Schiit Mani. It actually sounded quieter and more Dionysian than the Stacey stage—but also smaller, less vivid, and a lot less weighty and corporeal. All the way through, I kept thinking, *This Schiit costs 0.0032% the projected price of the Stacey, and dammit, the Mani sounds completely righteous in its own eminently musical way.* Through the Mani, the air in that 30th Street Studio was obviously darker and thicker than through the profoundly transparent Stacey—but its volume was not reduced. After my new symbol of the Best at Any Cost had left the room, the Mani still pleased me: It sounded open and well organized, and left me free to focus on the music.

The Blue Horizon Ideas Profono played righteously, too—but in an even more Apollonian way than the Stacey or the Mani. (The Mani was more like the Stacey in its femininity and charming delicacy.) The Profono was

The Profono was especially wonderful at distinguishing among the voices of the Clancy Brothers' 200 friends as they joined in every sing-along.

especially wonderful at distinguishing among the voices of the Clancy Brothers' 200 friends as they joined in every sing-along.

Folks, I swear to you right now: In today's world of high-end audio, the distance between the far-out absolute best and the pretty damn good at a reasonable price is not as big as you might think. And I tell this story not simply to show you how excellent and satisfying these two inexpensive phono stages are, but to give you a sly peek into some of the most secret carryings-on in that smoky, floating world of Gramophone Dreams. ■

Herb Reichert (Stletters@sorc.com) fills his Bed-Stuy man cave with exotic audio equipment, both ancient and modern.

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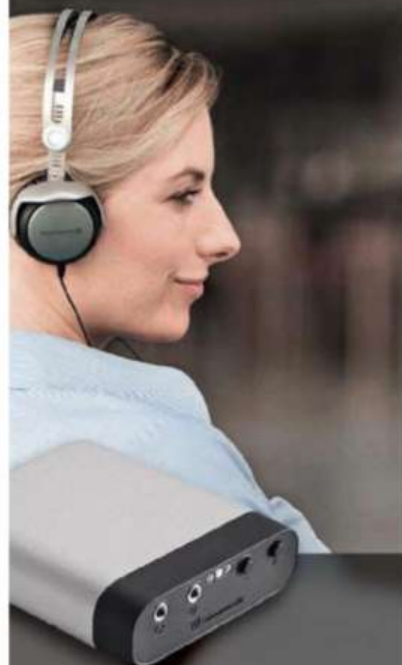
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- Alan Sircom, *HI-FI CHOICE*



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PRESENTS

500

RECOMMENDED COMPONENTS

2015

COMPONENTS LISTED HERE have been formally reviewed in *Stereophile* and have been found to be among the best available in each of four or five quality classes. Whether a component is listed in Class A or Class E, we highly recommend its purchase.

Each listing—in alphabetical order within classes—is followed by a brief description of the product's sonic characteristics and a code indicating the *Stereophile* Volume and Issue in which that product's report appeared. Thus the May 2014 issue is indicated as "Vol.37 No.5."

Some products listed have not yet been reported on; these are marked (NR), for "Not Reviewed." We recommend that you read any product's entire review before seriously contemplating a purchase (products without reviews should therefore be treated with more caution)—many salient characteristics, peculiarities, and caveats appear in the reviews, but not here. To obtain back issues of the magazine, visit our website: www.stereophile.com. We

regret that we cannot supply photocopies or e-mail copies of individual reviews. All full reviews are reprinted in our website "Archives" section: these are marked "WWW." More are added each week, so check the on-line listing.

In general, components do not remain listed for more than three years unless at least one of the magazine's writers and editors has had continued experience with them. Discontinuation of a model also pre-

cludes its appearance. In addition, though professional components—recorders, amplifiers, monitor speaker systems—can be obtained secondhand and can sometimes offer performance that would otherwise guarantee inclusion, we do not generally do so. *Stereophile's* "Recommended Components" listing is almost exclusively concerned with products currently available in the US through the usual hi-fi retail outlets.

HOW RECOMMENDATIONS ARE DETERMINED

The ratings given components included in this listing are based entirely on performance—ie, accuracy of reproduction—and are biased to an extent by our feeling that things added to reproduced sound (eg, jitter, distortion, colorations of various kinds) are of more concern to the musically oriented listener than are things subtracted from the sound (eg, deep bass or extreme treble). On the other hand, components markedly deficient in one or more respects are downrated to the extent that their deficiencies interfere with the full realization of the program material.

We try to include in "Recommended Components" every product that we have found to be truly excellent or that we feel represents good value for money. Bear in mind that many different tastes are represented. The listing is compiled after consultation with *Stereophile's* reviewing staff and editors, and takes into account continued experience of a product after the formal review has been published. In particular, we take account of unreliability and defects that show up after extended auditioning. The fact that a product received a favorable review cannot therefore be regarded as a guarantee that it will continue to appear in this listing.

The prices indicated are those current at the time the listing was compiled (July 2015). We cannot guarantee that any of these prices will be the same by the time this issue of *Stereophile* appears in print.

There is a near-universal consensus that at some point in the upward climb of component prices, severely diminishing returns (performance versus price) set in. However, there is no agreement as to the exact price level at which that takes place. Where we have found a product to perform much better than might be expected from its price, we have drawn attention to it with a \$\$\$ next to its listing. We also indicate, with a ★, products that have been on this list in one incarnation or another since

the "Recommended Components" listing in Vol.35 No.10 (October 2012). Longevity in a hi-fi component is rare enough that we think it worth noting (although it can also indicate that the attention of design engineers has moved elsewhere).

We are not sympathetic toward letters complaining that the Symphonic Bombast A-123 that we recommended heartily two

years ago no longer makes it into "Recommended Components." Where deletions are made, we endeavor to give reasons (there are always reasons). But remember: *Deletion of a component from this list does not invalidate a buying decision you have made.*

Individual reviewers mentioned by their initials are: John Atkinson, Jim Austin, Paul Bolin, Lonnie Brownell, Martin Colloms,

Brian Damkroger, Robert Deutsch, Art Dudley, Michael Fremer, Larry Greenhill, Jon Iverson, Fred Kaplan, Michael Lavorgna, Erick Lichte, John Marks, Stephen Mejias, Paul Messenger, Thomas J. Norton, Wes Phillips, Herb Reichert, Bob J. Reina, Kalman Robinson, Markus Sauer, Jonathan Scull (J-10), Chip Stern, and Sam Tellig.

TURNTABLES

Editor's Note: We strongly recommend those interested in LP playback visit our sister website www.AnalogPlanet.com, which is edited by Michael Fremer.

A+

CONTINUUM AUDIO LABS CALIBURN: \$200,000 WITH TONEARM AND STAND ★

"Part New Jersey diner, part Wurlitzer jukebox," the 160 lb Caliburn is the brainchild of Mark Doehtmann, whose clever, purposeful design is based on rigorous scientific methodology using finite-element analysis computer programs. While the only serious competition for the Caliburn is the Rockport System III Sirius, MF decided, "The Caliburn beat the Rockport's overall performance by a considerable margin," adding an "emotional majesty" that made the Rockport seem analytical. "Better than sex!" cried Mikey's wife, though compared to the Onedof turntable, while the Caliburn offered greater dynamics, transparency, and impact, it sounded slightly ragged and less stable, said MF. The ultrarigid Castellon stand, made of chromed, aircraft-grade aluminum, costs \$25k on its own (pheww). *Stereophile's* 2006 "Analog Source Component" and "Overall Product of the Year." (Vol.29 No.1, Vol.31 No.3, Vol.35 No.7 WWW)

VPI CLASSIC DIRECT TURNTABLE: \$30,000 INCLUDING TONEARM

A brand-new, US-made direct-drive turntable—in the 21st century? Believe it. For VPI's Classic Direct, designer Harry Weisfeld selected a \$4000 (his cost) Thin Gap motor, servo-controlled by a custom-designed active-feedback loop, which he combined with an 18-lb platter machined from a single billet of aluminum. The platter and drive system (combined weight: 27 lbs) are snuggled into an aluminum-and-MDF plinth measuring 23.5" wide by 17.5" deep. To this, Weisfeld has mated a version of his tried-and-true JMW unipivot tonearm updated in both mechanical design and materials choice, this one a seamless resin creation whose existence would not have been possible even five years ago. Referring to his longtime reference table-arm combination, MF observed that "the Classic Direct with its JMW Memorial 3D-printed 12" tonearm comes as close to the [Continuum] Caliburn's sound as has any turntable, and for less than one-fifth the price." Quibbles: MF wondered if even greater performance could be had with a more sophisticated plinth, and lacked enthusiasm for the model's peripheral platter clamp. (Vol.37 Nos. 5 & 6 WWW)

A

AMG VIELLA 12: \$17,500 AS REVIEWED

Made in Germany, the Viella 12 is a belt-drive turntable with an ellipsoidal plinth of aircraft-grade aluminum; a two-piece black-anodized aluminum platter; a two-pulse, low-speed, 24V DC motor, acoustically decoupled from the plinth by five mounts of rubber and metal; and a 12" tonearm with a unique, dual-pivot, vertical bearing system. Setup was simple. Used with a Lyra Atlas cartridge, the Viella 12 produced a rich, detailed midrange; nimble, well-controlled bass; and smooth, clean highs, said MF. "An incredible value," he decided. Reviewed with AMG 12J2 12" tonearm and Cherry wood skirt. Add \$500 for piano black lacquer skirt. Price without skirt is \$15,000.

(Vol.36 No.8)

AYRE/DPS: \$9250 WITHOUT TONEARM ★

In Willi Bauer's handsome dps, an aluminum plinth houses three shallow PVC cups, filled with elastomer buttons, that act as supporting springs for the rest of the turntable. The body is a laminate of six separate sheets: two layers of lossy damping material sandwiched by three sheets of Baltic birch plywood and topped with a layer of cork; the platter is acrylic. Bauer prevents energy storage by combining a resistive bearing with a high-torque AC synchronous motor, this powered by a three-phase power supply custom-made by Ayre Acoustics. Though it lacked the bottom-end heft of AD's Thorens TD-124, the dps showed unsurpassed pitch stability and revelatory soundstaging abilities. "A striking, innovative success," Art enthused. dps tonearm adds \$3500. (Vol.33 No.4 WWW)

BRINKMANN BALANCE: \$23,700 ★

The ready-to-play Brinkmann Balance is a plinthless table with an attractive, low-profile base available in a variety of sizes and configured for specified tonearm masses. Its high-tech feet are designed to effectively isolate the supporting base from horizontally and vertically induced vibrations, and its platter's speed can run at precisely 33.3 and 45rpm. Combined "deep, tight, articulate" bass performance with "the lightest, airiest, purest" soundstages to breathe new life into MF's favorite LPs, adding "greater holography of imaging but without etch." Recent upgrades include a new motor and new power-supply electronics. Adding Brinkmann's optional Rønt tubed power supply (\$4300) produced cleaner, better-articulated mid- and high-frequency transients, said MF. "The Brinkmann Balance remains one of a handful of the finest turntables being made today." Brinkmann 12.1 tonearm adds \$7500, Brinkmann EMT-ti cartridge adds \$4300. (Vol.28 No.5; Vol.35 No.4 WWW)

BRINKMANN SPYDER:

\$14,000 AND UP WITHOUT TONEARM

Offered as a replacement for Brinkmann's previous next-to-best turntable, the La Grange, the company's Spyder is a belt-drive turntable with a somewhat modular design, built around a small aluminum stand that holds the same heated platter bearing used in Brinkmann's top model, the Balance. The stand can accommodate up to four of the Spyder's massive aluminum tonearm bases (one base is included; extras are \$3000 each), and a similarly massive outboard pod contains Brinkmann's own AC motor, the Sinus. A solid-state power supply for the motor comes standard; a tubed supply, the Rønt II, is a \$4300 option. Partnered with Brinkmann's new 12.1 tonearm, the "slightly warm"-sounding Brinkmann Spyder lacked the very last word in weight and drive, but impressed MF with its "authoritative dynamics, an especially strong sense of musical flow, and backgrounds so 'black' that I often thought I'd selected the wrong input when . . . I unmuted the preamp." MF concluded that the combination of "innovative, flexible, upgradeable design, quality manufacturing, careful attention to small but important details—and outstanding sound—make the Brinkmann Spyder with 12.1 tonearm easy to recommend." (Vol.38 No.5)

BRINKMANN BARDO:

\$9490 WITHOUT TONEARM ★

The Bardo is a direct-drive, suspensionless turntable with an eight-pole, speed-controlled motor. It has a vinyl platter mat, a polished granite base, and the superbly designed and machined spindle and bearing used in Brinkmann's more expensive Oasis, La Grange, and Bal-

ance models. Fit'n'finish were outstanding, and setup was quick and simple. Though it lacked the rich, deep bass of Brinkmann's more expensive tables, the Bardo "produced superbly well-organized sound with clean, sharp attacks, reasonably strong sustain, and pronounced decay, all against a jet-black backdrop," said Mikey. Precision-ground crystal platter mat and screw-down record clamp now included in price; optional Balance power supply adds \$1490. (Vol.34 No.5 WWW)

LINN SONDEK LP12: \$4320—\$22,390 ★

The Linn Sondek LP12 has, since 1972, literally grown into its role as one of the most popular high-end turntables: Linn has devised and offered for their belt-drive, suspended-subchassis flagship all manner of upgrades, ranging in complexity from improved fasteners to entirely new motors, power supplies, and subchassis systems; commendably, all have been retrofittable. Some stand-outs: The Lingo power-supply mod of 1990 minimizes the LP12's propensity toward a slightly flat midbass and subjectively "adds an octave of low-bass extension," according to JA—who, despite flirtations with other decks, remains true to the basic design he has used now for almost four decades. The Keel one-piece subchassis, tonearm board, and Linn-specific tonearm mounting collar of 2006 makes "an unambiguous improvement in the LP12's performance," according to AD, with sound "both bigger and richer [in detail]." And, in 2011, AD installed the Linn Radikal mod—a DC motor with an outboard switch-mode power supply and control unit—and said that it adds "more force, more momentum, and a little more sheer grip on the notes." These and other upgrades remain available individually, but LP12 pricing appears, at present, limited to complete turntable-tonearm-cartridge packages. The least expensive of those—the Majik LP12—fits the table with the standard subchassis, wood-composite armboard, and AC synchronous motor, and adds the onboard Majik LP12 single-speed power supply, a push-on 45Rpm adapter hub for the motor pulley, a Pro-Ject 9cc tonearm, and a Linn Adikt moving-magnet cartridge, for \$4320. Although we have auditioned many of Linn's current upgrades, we have not done so in the combinations offered in that and other packages, and at least one LP12-specific product—the mid-level Kore subchassis/armboard—has not yet been submitted for review. That said, our experience leads us to expect high Class-B performance—superbly low measured rumble, excellent speed stability, and very good musical involvement—from an entry-level LP12, while previous incarnations of the full-monty LP12 have delivered true Class-A sound. (Vol.7 No.2, Vol.13 No.3, Vol.14 No.1, Vol.16 No.12, Vol.17 No.5, Vol.19 No.2, Vol.26 No.11, Vol.28 No.2, Vol.30 No.10, Vol.34 No.6 WWW)

ONEDOF TURNTABLE: \$200,000 AS REVIEWED

The audacious Onedof (One Degree of Freedom) turntable comprises three towers, one each for the motor, the tonearm, and the massive platter bearing, the last also serving as the platter's pedestal. The self-centering bearing system has no points of solid contact and generates virtually no heat. To ensure that an LP rests flatly against the platter, the Onedof employs a massive central weight and a gold-plated platter ring. Compared to Mikey's Continuum Caliburn, the Onedof sounded smoother, silkier, and less mechanical, but lacked dynamic expression, transparency, and impact, which keeps it from Class A+. "I'd take a new Rega RP6 for roughly 1/100th the price," snorts ST. Sold factory direct to order only. (Vol.35 No.7)

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PALMER 2.5: \$8990 IN BALTIC BIRCH WITHOUT TONEARM

As with the designs of the late Tom Fletcher, of Nottingham Analogue, the British-built Palmer Audio 2.5 mates a massive (21 lbs) aluminum-alloy platter with an AC motor so tiny and low in torque that merely pushing the On/Off button on its outboard power supply won't set the platter spinning: The user must start it by hand. A hefty platter bearing and a similarly hefty, cantilevered, rotatable arm-mount complete the picture. Installation, though not too daunting, is not helped by disappointing documentation. Used with the Audio Origami PU7 tonearm, with which one often sees it paired, the Palmer Audio 2.5 impressed MF with its "attractive, velvety mid-band," "black backgrounds," and "serenity and smooth musical flow." Especially where the PU7 is the intended partner, prospective owners are urged by MF to consider cartridges that, in other settings, might be considered on the lean side of neutral. Note that a special version of the 2.5, the Palmer Audio 2.5-12, is available for use with 12" tonearms. (Vol.37 No.11)

PEAR AUDIO BLUE KID THOMAS: \$7995 WITH CORNET 2 TONEARM

From Pear Audio Analogue's Blue line of products comes the Slovenian-made Kid Thomas turntable, with its chunky wooden plinth, massive platter, and very low-torque DC motor: characteristics that betray no small influence from the products of the late Tom Fletcher, founder of Nottingham Analogue. (Those qualities also put the Kid Thomas in the same file folder as the Palmer 2.5, although Pear Audio has the distinction of having received Fletcher's direct input and guidance.) Variations on the theme include: the Kid Thomas's double-layer plinth; thick, elastic damping rings on the platter's outer edge; and the user's ability (for an additional \$1995) to upgrade from the standard wall wart to an external power supply made by Martin Bastin, a specialist in same. Fitted with Pear Audio's Cornet 2 tonearm, the Kid Thomas exhibited "a rich, expansive midrange and a smooth, neutral tonal balance," according to MF. "[E]ven if a bit overprominent, that midrange was something special, with black backgrounds and tape-like musical flow and drive." (Vol.38 No.1 WWW)

SME 20/12A (INCLUDES/312S TONEARM):**\$18,599; SME 20/12 (NO TONEARM): \$15,599 ★**

"Among the best-built turntables in the world," the SME 20/12 is a tank-like machine weighing more than 75 lbs. It has an oversized 14.3-lb platter, and a 176-lb aluminum-alloy subchassis secured by ten O-rings for each of four suspension towers and will take 12" arms. Its three-phase, eight-pole motor uses an electronic controller to achieve precise speeds of 33.3, 45, and 78rpm. Though it lacked the bottom-end weight and macrodynamic range of even more expensive turntables, and had a slightly dry, analytical sound, the SME offered a very low noise floor and stable image specificity, said MF. Price without tonearm is \$18,500. (Vol.32 No.5 WWW)

SPERLING-AUDIO L-1: \$35,950 WITHOUT TONEARM

With a total weight of about 110 lbs—the platter alone weighs 60 lbs—the unabashedly beefy L-1 turntable from Sperling-Audio, of Welver, Germany, is built on a V-shaped plinth, both strokes of which contain an armboard incorporating a pair of eccentrically arranged circular plates: lockable, lavishly calibrated, and adjustable for a wide range of spindle-to-tonearm-pivot distances. The plinth is layered—aluminum plates alternate with the customer's choice of slate, wood, or two different polymers—and supports a massive, inverted ball bearing for the aluminum-alloy platter, the latter driven by a low-voltage DC motor and a Mylar-tape belt. The record is supported on the massive platter by eight wedge-shaped "exserts" that prevent contact between vinyl and aluminum; MF questioned this element of the design, and enlisted various record weights and an intermediary record mat as a workaround. In addition to praising the L-1's "exquisite machining and plating," MF described the combination of Sperling-Audio turntable and Kuzma 4Point tonearm as offering "solid, stable imaging, clean and precise transient response, and the dynamic slam and authority managed by only the best turntables." (Vol.38 No.8)

SPIRAL GROOVE SG1.1:**\$25,000 WITHOUT TONEARM ★**

The 75-lb SG1.1 is a remarkably dense, belt-driven, split-plinth design with an onboard AC synchronous motor driving a 22-lb platter of graphite, vinyl, and phenolic. While the SG1.1's clever tonearm-mounting system allows for simple installation of most any arm, Spiral Groove's complementary Centroid tonearm is designed for optimal system stability. Build quality was superb. Possibly the quietest turntable-tonearm combo in Mikey's experience, the SG1.1-Centroid matched black backgrounds with delicate highs, natural attacks and decays, and rock-solid bass. (Vol.35 No.11)

SPIRAL GROOVE SG2:**\$15,000 WITHOUT TONEARM ★**

Well built, simple to set up, and bulletproof in operation, the SG2 is designed by Allen Perkins and represents an evolution of design and production capabilities from his RPM turntables. Though similar in appearance to the RPMs, the Spiral Groove uses a five-layer chassis—two thin layers of damping material separated by three aluminum plates—and a thick, anti-vibration platter comprising layers of aluminum, an impregnated phenolic, vinyl, and graphite. The bearing assembly has been optimized to eliminate radial movement and prevent stray magnetic fields from interacting with the cartridge. The SG2's dramatic timing, authoritative midrange, and superb resolution of detail worked to present music with an urgency and wave-like drive, said BD. Through the SG2, "[a recording] became a performance," he enthused. (Vol.33 No.6 WWW)

TECHDAS AIR FORCE ONE: \$105,000

"A visually stunning technological tour de force," the 174-lb Air Force One has a three-layer-damped aluminum chassis, a forge-processed stainless-steel platter, and a massive AC synchronous motor controlled by an outboard dual-50W amplifier. The platter uses an air bearing; LPs are held to the platter with vacuum suction. The review sample was equipped with a Graham Engineering Phantom II Supreme tonearm. Though it didn't sound as smooth as the Continuum Caliburn or the Onedof One

HOW TO USE THE LISTINGS

The classes each cover a wide range of performance. Carefully read our descriptions here, the original reviews, and (heaven forbid) reviews in other magazines to put together a short list of components to choose from. Evaluate your room, your source material and front-end(s), your speakers, and your tastes. With luck, you may come up with a selection to audition at your favorite dealer(s). *"Recommended Components" will not tell you what to buy any more than Consumer Reports would presume to tell you whom to marry!*

CLASS A

Best attainable sound for a component of its kind, almost without practical considerations; "the least musical compromise." A Class A system is one for which you don't have to make a leap of faith to believe that you're hearing the real thing. With Super Audio CD, DVD-Audio, and Hi-Res PCM and DSD files now available, we have created a new Class, A+, for the best performance in those digital categories. Class A now represents the best that can be obtained from the conventional 16/44.1 CD medium. We also created Class A+ categories for turntables and phono preamps, to recognize the achievements of the Continuum Caliburn and Boulder 2008, respectively.

CLASS B

The next best thing to the very best sound reproduction; Class B components generally cost less than those in Class A, but most Class B components are still quite expensive.

CLASS C

Somewhat lower-fi sound, but far more musically natural than average home-component high fidelity; products in this class are of high quality but still affordable.

CLASS D

Satisfying musical sound, but these components are either of significantly lower fidelity than the best available, or exhibit major compromises in performance—limited dynamic range, for example. Bear in mind that appearance in Class D still means that we recommend this product—it's possible to put together a musically satisfying system exclusively from Class D components.

CLASS E

Applying to "Loudspeakers," these are entry-level products.

CLASS K

"Keep your eye on this product." Class K is for components that we have not reviewed (or have not finished testing), but that we have reason to believe may be excellent performers. We are not actually recommending these components, only suggesting you give them a listen. Though the report has yet to be published in certain cases, the reviewer and editor sometimes feel confident enough that the reviewer's opinion is sufficiently well formed to include what otherwise would be an entry in one of the other classes, marked (NR).

Degree of Freedom, the Air Force One was sensational in terms of harmonics, space, texture, and microdynamics, said Mikey. "The TechDAS Air Force One was a sonic masterpiece," he concluded. (Vol.36 No.4)

THALES TTT-COMPACT: \$13,200

Designed and built in Switzerland by former watchmaker Micha Huber, the elegant TTT-Compact measures approximately 18" W by 3.5" H by 12" D and hides its belt and built-in motor under its 14-lb damped platter. The drive system comprises a small-diameter belt driving a grooved subplatter positioned very close to the triple-phase DC motor. A massive circular tonearm-mounting platform with integrated RCA-jack module locks securely to the main chassis via six hex-head screws. Setup was simple, but required great care to avoid damaging the exposed tonearm wires. Partnered with the matching Simplicity tonearm, the TTT-Compact produced a slightly bright overall sound, with rock-solid images, ultraclean transients, a neutral midrange, and rhythmically taut bass, said MF. A new version of the partnering tonearm, the Simplicity II (\$9200), replaces the original's ruby bearings with microball bearings, and its armtubes are more precisely turned and damped. As MF wrote, "The Simplicity II performed flawlessly. Its bearing system was perfectly behaved, and seemed frictionless." MF also observed that the brightness of which he'd complained in his first review "had disappeared." (Vol.37 Nos. 1 & 12)

VPI HRX: \$12,000, WITH TONEARM ★

Harry Weisfeld's efforts to produce the ultimate TNT turntable include a plinth of acrylic-aluminum-acrylic laminate, an inverted bearing assembly, the addition of a perimeter clamping ring, and replacement of the outboard motor and flywheel with a single unit. Simpler, smaller, more luxuriously appointed, and better built than the TNT, the HR-X also eliminates the TNT's pervasive warmth and softened dynamic transients, to offer a much more neutral overall presentation. BD: "The HR-X struck me as a stable, inert, and nearly neutral platform that simply supports a cartridge and lets it do its job." Price includes VPI's JMW-12.7 tonearm (see "Tonearms"). (Vol.29 No.5 WWW)

VPI SUPER SCOUTMASTER REFERENCE

RIM DRIVE: \$10,000 ★

The Super Scoutmaster Reference Rim-Drive combines the Scoutmaster's Super Platter with the Super Scoutmaster's Mini-TNT Stabilizer feet, and uses a rim-drive motor system based on the HR-X's dual-motor/flywheel module. It comes equipped with a JMW-10.5i Memorial tonearm fitted with Nordost Valhalla wire. The sound was "fantastic," with impressive bottom-octave heft and slightly warm high frequencies. "The Super Scoutmaster Reference Rim-Drive is one of the best values of the true high-end turntables now available," said MF. (Vol.32 No.2)

VPI CLASSIC SIGNATURE: \$6000

WITH TONEARM ★

Like earlier Classic models, VPI's most recent design, called the Classic at the time of review, is easy to set up, relatively compact (22" W by 10" H by 16" D), and uses a motor that has been integrated into its plinth. Refinements over earlier models include a more massive, better-damped plinth structure, newly designed feet, and an 18-lb damped aluminum platter. Though the Classic 3 wasn't as quiet as MF's much more expensive Continuum Caliburn and couldn't match the rich midrange of Dr. Feickert's Blackbird, the VPI had a clean, fast, lively sound marked by masterful attacks, outstanding microdynamics, and lifelike textures. "One of today's great values in analog audio," concluded Mikey. "I don't hear how you can go wrong buying one." Borderline Class A. Price includes the new JMW-Classical tonearm. See "Tonearms." (Vol.34 No.10 WWW)

WAVE KINETICS NVS REFERENCE: \$45,000

Made in a California factory that specializes in microbotics, the NVS Reference is superbly built and has a dramatic physical appearance: A large sculpted pod forms a central pillar and holds the motor—a custom DC design governed by a "laboratory-grade" commercial servo-controller with an active, ultrasonic feedback loop that produces a claimed speed accuracy of 1 part per million. Atop the motor is the NVS's 30-lb platter, which compris-

es three slabs of aluminum interleaved with two slabs of a mass-loaded white polymer. The turntable's platform is machined from billets of solid aluminum and includes a proprietary vibration-damping material. Compared to the Continuum Caliburn, the NVS Reference had similar bass extension and control, but offered slightly drier textures, muted attacks, and less dimensional images, said MF. "A top-shelf turntable that's easy to recommend," he concluded. (Vol.35 No.10)

B

CLEARAUDIO OVATION: \$6500 WITH TONEARM

Using technology found in Clearaudio's more expensive Innovation series, the elegant-looking, belt-driven, three-speed Ovation measures 16.5" W by 6" H by 14" D and weighs 34 lbs. It uses a decoupled DC motor and has a resonance optimized chassis of Panzerholz and machined aluminum, a 1.5"-thick polyoxymethylene platter, and self-adjusting speed control. More nuanced and resolving than Clearaudio's entry-level Concept, the Ovation had a smooth, cohesive, and organic overall sound that combined sweet highs, a warm midrange, and taut bass, said EL. Compared to EL's Bel Canto digital front-end, the Ovation offered greater midbass body, but lacked some image depth and bass extension. Price without tonearm is \$5000. (Vol.35 No.10 WWW)

LUXMAN PD-171: \$6400 WITH TONEARM

The retro-styled PD-171 is a two-speed, belt-driven turntable with an AC synchronous motor and a 9", S-shaped tonearm made by Jelco. Central to the turntable, and largely responsible for its 51 lbs, is a 15mm-thick solid-alloy top plate that supports an 11-lb platter and sits above a plinth made of hardwood and sheet steel. Separating plate from plinth is a thin layer of damping material; additional vibration control is provided by four adjustable feet. Fine-tuning controls are provided for both running speeds; a slender, columnar LED light pole acts as a cueing aid; and a robust, clear-plastic dustcover is included. Setup was straightforward. Exceptionally forgiving of poorly recorded and very worn LPs, the Luxman sounded slightly warm overall, with a sweet top end, rich midrange, and reasonably satisfying bass, said AD. (Vol.36 No.11 WWW)

ORACLE PARIS: \$3750 WITH PARIS TONEARM ★

The newest turntable from Canada's Oracle Audio Technologies is finished in a stunning high-gloss red lacquer and uses a carbon-fiber tonearm based on Pro-Ject's 9cc. To both minimize the effects of harmful vibrations and allow for easy, accurate leveling, the platter and tonearm have been cleverly isolated from the turntable's subchassis, plinth, and AC synchronous drive motor. Oracle's Micro Vibration Silicone Damping Device, a tonearm-damping system comprising a stationary trough and silicone bath, further reduces vibrations. Setup was simple. Though it wasn't as quiet as AD's reference Garrard 301 and lacked that player's tonal color and texture, the Paris performed especially well with up-tempo rock music, exhibiting good timing, a punchy low end, and clean highs. Price includes tonearm and moving-coil cartridge; base price for turntable is \$3150. (Vol.34 No.10 WWW)

PEAR AUDIO BLUE KID HOWARD:

\$4995 WITH CORNET 2 TONEARM

Built in Slovenia, the Blue Kid Howard turntable and its partnering tonearm, the Cornet 2, were designed by the late Tom Fletcher, the influences of whose Nottingham Analogue products are very much apparent: At the center of the Kid Howard is a substantial aluminum platter, belt-driven by a motor of such low torque that the user must physically nudge it into motion, while the Cornet 2 is a captured-unipivot design, most of whose structure elements are machined from acetel. Despite offering less touch and force than AD's Garrard 301 turntable, which is old enough to collect Social Security checks, the Kid Howard impressed him by producing a soundfield that was "engagingly, involuntarily big," and by allowing stringed instruments in particular to sound beautifully lush: the Kid Howard "was like a window opened on a great, rolling field of tone and texture," he wrote. In addition to criticizing the "wobbledy-clunk" feel of the Cornet 2 tonearm, AD cau-

tioned that this "ever-so-slightly unbright" combination will perform best in systems that are amenable to slightly soft trebles. (Vol.38 No.7 WWW)

PTP AUDIO SOLID12: \$3300

Made in the Netherlands by Peter Reinders, the Solid12 has a heavy Corian plinth and uses several reconditioned components from original heavy-platter, idler-wheel Lencos: motors (along with their suspension cradles and wiring blocks), platters, platter bearings, platter mats, idler wheels, and idler-support mechanisms. Setup was simple and straightforward. Combined with AD's Schick tonearm and Ortofon SPU cartridge, the Solid12 delivered punch, drive, force, color, richness, and pure emotional and visceral involvement. "The essential musical rightness and the sheer availability and affordability of PTP Audio's Solid12 can't be overstated. If you want to know what the idler-wheel fuss is all about, this may be the easiest and most affordable way to find out," AD concluded. Price includes shipping from Amsterdam. (Vol.36 No.6 WWW)

REGA RP8: \$2995 WITH TONEARM

A highly evolved embodiment of Rega's philosophy of low mass and high rigidity, the RP8 uses a new low-mass, precision-engineered R808 tonearm and a "skeletal" frame made from Rega's own version of Zotek, an ultrarigid polyolefin foam. As in the RP3 and RP6, a stress beam links the tonearm to the platter hub, increasing structural rigidity while reducing internal resonances and external vibrations. A newly designed glass platter is heavier at its perimeter, exponentially increasing the platter's flywheel effect and maximizing energy efficiency. Setup was quick and simple. Though it ran slightly fast, the RP8 produced a powerful, dramatic, coherent overall sound with solid, well-defined images; clean, articulated bass; exceptional resolution of detail; and outstanding dynamics, said MF. "Rega's new turntable-tonearm combo is the most exciting and truly revolutionary turntable to be introduced in quite some time," he concluded. If purchased with the Apheta 2 MC cartridge preinstalled, the RP8 costs \$4195, a savings of \$695. (Vol.36 No.11)

WELL TEMPERED AMADEUS MK.II: \$2850 INCLUDING TONEARM

The Chinese-made Amadeus Mk.II more or less replaces the US-made Well Tempered Record Player, long an AD favorite. Compared with that earlier 'table-arm combination, the Amadeus Mk.II uses a less complex platter bearing that uses light oil instead of thick silicone; a flat-profile platter with foam mat instead of a concave platter with threaded spindle clamp; an onboard low-torque motor instead of a more powerful outboard motor; a drive thread instead of a drive belt; and a thinner plinth, without the damping layer of yore. Changes evinced in the new Symmetrex tonearm include the elimination of adjustability for overhang and offset angle, and the switch from a purpose-made damping paddle to a bisected golf ball. Notwithstanding those changes, Well Tempered's second-least-expensive record player has, according to AD, "a musically involving sound—good timing, very good momentum and flow—combined with the sorts of spatial accomplishments and lack of obvious colorations that I associate with more traditional high-end audio products." (Vol.37 No.8 WWW)

C

CLEARAUDIO CONCEPT: \$1400

WITH TONEARM \$\$\$ ★

The sleek, stylish Concept is a plug'n'play, belt-driven turntable with a decoupled DC motor and integral Clearaudio Verify tonearm, available with either the Concept MC moving-coil cartridge (add \$800) or Concept MM moving-magnet cartridge (add \$200). Though its attack transients were soft and its deep-bass extension limited, the Concept produced black backgrounds, solid and three-dimensional images, and a clean, smooth midrange. "Exceptionally attractive, easy to set up and use, and better built than its price would suggest," concluded MF. "High Class C" says EL. With Clearaudio's standard Concept moving-magnet cartridge in place, EL noted a slightly opaque, closed-in treble, but was nevertheless impressed by the Concept's fleshy, detailed midrange and

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woo audio

rich upper bass. Switching to the Concept MC cartridge resulted in even greater midrange detail and palpability, and a sweeter, more extended treble, he said. (Vol.34 No.6, Vol.35 No.8 WWW)

MUSIC HALL IKURA: \$1195

Designed in the US and manufactured in the Czech Republic, the Music Hall Ikura is a two-speed, belt-drive turntable that comes packaged with a 9" tonearm and bundled with an Ortofon 2M Blue MM cartridge (the latter a \$236 value when bought separately). The Ikura's simple and distinctly attractive exterior—according to BJR, even the dustcover is “sexy”—conceals a clever two-plinth design, with motor and electronics fastened to the bottom structure and the platter bearing and tonearm fastened to the top, with rubber cones in between. A pre-lubricated, stainless-steel ball bearing with a Teflon sleeve, a platter machined from MDF, and a DC motor are also featured. The aluminum tonearm has Swiss-made ABEC 7 (that's good) stainless-steel bearings, adjustable VTA, and a falling-weight antiskating mechanism. Cartridge alignment and arm height are set at the factory, although future adjustments, tools and instructions for which are included, can be easily made. In his listening, BJR discovered high-frequency performance that was “impressive for a \$1200 turntable” and bass performance that was “even more impressive.” On the downside, he found that the Ikura—2M Blue combo could be flustered by unusually demanding passages. (Vol.37 No.12 WWW)

PIONEER PLX-1000:

\$699 INCLUDING TONEARM \$\$\$

To those who deny the musicality of direct-drive platters and the servos they rode in on, HR says: *Bunk*. “Forget analog vs digital or tubes vs solid-state; the most pervasive and poorly considered belief of all is that only belt-drive turntables are worthy of audiophile consideration.” From there, HR praises this successor to the popular but discontinued Technics SL-1200MK2: the Pioneer PLX-1000 direct-drive turntable with integrated tonearm. “Belts can't touch the PLX-1000's excitement, naturally formed detail, and clearly expressed forward momentum,” he wrote. “This new Pioneer also showcases the complex tonal character and elegant structures of classical music better than any affordable belt-drive I've experienced.” As HR hears it, the PLX-1000, whose motor has more than twice the torque of its famous forebear, “is not only a worthy successor to the legendary Technics SL-1200MK2, it is a serious contender for the best audiophile-grade turntable for less than \$2000. Unabashedly recommended.” After a round of second-thoughtfulness, plus trials with an even greater array of partnering cartridges—including the affordable Shure SC35C (\$75)—HR encouraged the bravest and most technically adept owners to check the tonearms of their PLX-1000 turntables for excessively loose bearings. Otherwise, “I could live the rest of my music-loving, record-collecting life” with the Pioneer player. (Vol.38 Nos. 3 & 7 WWW)

REGA RP3: \$1095 \$\$\$

Though similar in appearance to Rega's P3-24, the RP3 uses Rega's new RB303 tonearm and a completely redesigned plinth. The RB303 has a more rigid armtube, a revised three-point cartridge mount, and a new headshell, counterweight, and bearing assembly. The plinth now incorporates a flat, 4mm brace of superhard phenolic resin that couples the tonearm mount to the bearing assembly, both atop and below the plinth, to reduce mass and increase rigidity. Compared to the P3-24, the RP3 sounded leaner and cleaner, with a tighter and better-controlled bottom end, said MF. “The RP3 is a plug'n'play package that's beautifully built, well engineered, and sounds wonderful,” he concluded. Compared to the VPI Traveler, the RP3 consistently produced faster transients and more aggressive, precise imaging for an overall sound that was snappy and exciting, but lacked the Traveler's liquidity, bottom-end control, and rhythmic stability, said SM. Price includes Elys 2 moving-magnet cartridge; base price for turntable with tonearm is \$895. Optional Drive Belt: \$59; Rega TT PSU: \$395 (Vol.34 No.12, Vol.35 No.11)

VPI TRAVELER: \$1499 \$\$\$

The first VPI product codelveloped by Harry Weisfeld and

his son Mathew, the Traveler is designed for easy setup and meant to appeal to a younger generation of music lovers. It uses an AC synchronous motor built directly into a rigid, compact chassis of Delrin and aluminum; a machined aluminum platter damped with a stainless-steel disc; a high-quality bearing assembly capable of driving a 20-lb platter; and a dedicated 10"-long, spring-loaded tonearm with a double-gimbal bearing for horizontal and vertical movement. The Traveler combined delicate highs, a clean midrange, outstanding low-end control, and awesomely silent backgrounds with an overall ease and fluidity that SM found intoxicating. Compared to the Rega RP3, the Traveler lacked transient speed and precision but offered greater clarity, presence, and rhythmic authority. MF says high Class C. Running changes since SM's first review include sturdier tonearm bearings, a repositioned motor, a better platter mat, and cosmetic refinements; the last, according to SM, have left the current-production Traveler “easily more attractive than the original.” Available finishes include black, red, white, or blue. (Vol.35 No.11, Vol.37 No.5 WWW)

VPI NOMAD: \$995 \$\$\$

Equal parts entry-level audiophile component and perfectionist-quality lifestyle product, the VPI Nomad bundles a wood-plattered, belt-drive turntable and 10" gimbaled tonearm with an Ortofon 2M Red cartridge and an on-board phono preamplifier designed specifically around the former—plus an onboard headphone amp. BJR was impressed with the Nomad's apparent durability and the plug-and-play ease with which it went from carton to system, with no painstaking adjustments required. Even more impressive was the player's performance: BJR praised the Nomad's “rich, voluptuous, uncolored midrange,” and heard “superb” transient articulation and “an impressive amount of inner detail for so inexpensive an analog rig.” One comparison test prompted BJR to declare: “that VPI's phono stage held its own against a \$500 phono stage designed by one of the industry's top electronics designers is pretty impressive, given that the VPI's stage is included as part of a turntable package costing only \$995.” A word of caution regarding the Nomad's headphone amp: “It had much more gain than most pairs of headphones need. I found it all too easy to overdrive my ‘phones.” (Vol.38 No.2 WWW)

D

MUSIC HALL USB-1: \$249 ★

The two-speed, belt-driven USB-1 bears a striking resemblance to the iconic Technics SL-1200 turntable. It comes equipped with an aluminum platter and felt platter mat, an S-shaped tonearm with detachable headshell, a serviceable Audio-Technica AT3600L moving-magnet phono cartridge, antiskating and pitch controls, and a thick dustcover. The USB-1 had a slower, darker, less rhythmically assured sound than the Rega RP-1, but produced eerily quiet backgrounds and solid stereo imaging. SM partnered the USB-1 with the Audioengine 5 powered speakers for “a stripped-down, badass, bitchin' little system.” Converting vinyl to WAV files via the USB-1's built-in phono preamp, USB output, and Audacity software was a simple but tedious process. (Vol.34 No.5 WWW)

REGA RP1: \$445 \$\$\$ ★

The plug'n'play RP1 (for Rega Planar One) replaces Rega's popular P1. Nearly identical to the earlier model in size and shape, the RP1 uses an Ortofon OM5e moving-magnet cartridge, but trades the P1's MDF platter for one of phenolic resin and adds Rega's new, solidly built RB101 tonearm. Additionally, the P1's drab gray finish is exchanged for the RP1's choice of White, Cool Gray, or Titanium. Compared to the P1, the RP1 delivered more drive, better focus, and was the more confident, purposeful, and authoritative player. “Rega's RP1 looks good, is easy to set up, and plays records like it means it,” said SM. AD shared SM's enthusiasm: “It's not just that I can't imagine \$445 buying more happiness; I can't imagine so modest an investment in money and effort buying more music.” The RP1 Performance Pack Upgrade was easy to install and resulted in a bigger soundstage, deeper silences, and greater resolution of low-level detail, said SM. “A no-

brainer,” agreed AD. (Vol.34 Nos.2, 4, & 5 WWW)

K

Origin Live Resolution Mk3.

DELETIONS

Dr. Feickert Blackbird not auditioned in a long time.

TONEARMS

A

AMG 12J2: \$4500

12" tonearm with dual-pivot, vertical bearing system. See MF's review of the AMG Viella 12 turntable. (Vol.36 No.8)

AMG 9W2: \$3500 \$\$\$

The German-made 9W2 tonearm from turntable specialists AMG combines a traditional horizontal bearing with a vertical bearing that is, per AD, unique in its field: “an upright pair of 0.4mm spring-steel wires that are perfectly straight when the tonearm tube is balanced, yet flex in tandem and yield to the armtube's mass when the counterweight is moved closer to the twin fulcrums.” The result, he reports, is a near-ideal combination of zero play and absence of friction. VTA and azimuth are easily adjusted, and a magnetic antiskating mechanism is included. Used on his Linn LP12—for which the 9W2 was apparently designed—the 9W2 was, said AD, “the first Linn-friendly arm I've heard that has made me stop sobbing about the demise of the Naim Airo: a considerable feat.” Also with reference to his past favorite tonearms, AD added: “None surpasses the 9W2 in sheer build quality.” (Vol.37 No.10 WWW)

BRINKMANN 12.1: \$7500

More than just a Brinkmann 10.5 tonearm with a longer armtube (its effective length is, you guessed it, 12.1”), the 12.1 incorporates mechanical refinements that, according to Brinkmann, endow it with greater torsional stability and greater immunity to resonances. Crafted from aluminum and stainless steel, it uses precision ball bearings for both vertical and lateral movement, and is available with either flying signal leads or a captured output cable of the usual sort. MF felt the Brinkmann 12.1, when compared with the Kuzma 4Point tonearm, had somewhat less slam but was lighter on its feet—and, with classical and jazz, is perhaps the better choice. And MF loved the 12.1's “lusciously velvet midrange.” (Vol.38 No.5)

BRINKMANN 10.5: \$6300 ★

A Breuer-like gimbaled-bearing design that features an armtube described by the designer as a “high-speed, double-concentric, ceramic-plated, self-damping transmission device.” JI uses a Brinkmann arm on his Oracle with great success. (Vol.28 No.5)

CONTINUUM AUDIO LABS COBRA: \$22,500 ★

The Cobra's odd shape—it's wider and higher in the middle—is designed to make the center of the arm as stiff and free of resonances as possible. The Cobra also includes original and ingenious methods for azimuth stabilization and adjustment. “The Caliburn-Cobra produced the most convincing, believable, solid, and alive sound picture I've heard,” said MF. Though its tonal balance was similar to that of the Kuzma 4Point, the Cobra sounded less energetic and less natural, decided MF. (Vol.29 Nos.1 & 6, Vol.34 No.10, Vol.35 No.7 WWW)

DURAND TONEARMS TELOS: \$25,500 ★

The beautiful Telos, Durand's top model, is a 12”, medium-mass tonearm made of a superbly sculpted and finished piece of wood. It comes in an attach-style wooden case and includes a full set of high-quality setup tools and accessories: LED flashlight, loupe, pivot-to-spindle-distance gauge, and alignment gauge. The “constrained unipivot” design provides relatively easy azimuth adjustment and uses a Swiss-made point of nonmagnetic stainless steel and a sapphire cup. With the Lyra Atlas cartridge mounted in its headshell, the Durand Telos sounded “addictively glorious,” with outstanding harmonic richness and a relaxed sense of musical flow. Though bass response was well textured and relatively well controlled, the Telos

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lacked some bottom-octave solidity and punch, decided MF. (Vol.35 No.10)

EMT 997: \$5250

The banana-shaped EMT 997 tonearm is a fixed-pivot, high-mass design that is supplied without a headshell. (Use with old-style pickup heads is presumed, although the 997 is compatible with conventional detachable headshells.) Its effective length of 307mm (12") works to minimize tracking-angle error and distortion. Though it sacrificed timbral neutrality, imbuing well-recorded voices with "some mid-to-upper-mid bumps and dips," the 997 impressed AD with its ability to convey the inherent tension of recorded music. "The EMT 997 was the least wimpy, least wispy tonearm I've ever heard," he said. If willing to invest the time and effort necessary for proper installation and setup, the user will be rewarded with "an almost indescribably great deal of pleasure," AD added. Current-production samples of the EMT 997 incorporate a bearing housing machined from brass rather than stamped from aluminum alloy, and a better finish for the armtube. AD found the bearings of the new version to have less play than those of its predecessor, the sonic and musical consequence being "a surprising if subtle increase in musical drive." That unexpected refinement of an already Class A tonearm prompted the 997's promotion to Class A+ status, of which AD said, "the EMT remains the best-sounding tonearm I have used... and the best-built arm I have owned." (Vol.31 Nos. 7 & 9, Vol.38 No.7 WWW)

IKEDA IT-407CR1: \$6500

Imported from Japan by Beauty of Sound, the IT-407 is a remarkable, high-mass 12" tonearm: "a beautifully rounded construction of polished chrome and stainless steel that appears to be at once both new and old," said AD. It offers several setup and adjustment features, including: spring-actuated dynamic tracking force; a calibrated and adjustable falling-weight antiskating mechanism; an adjustable lift/lower platform, mated to Ikeda's trademark spherical cueing knob; a headshell that's easily adjustable for overhang, offset angle, and azimuth; and an adjustable arm pillar. The Ikeda excelled at minimizing groove noise and produced a big, round sound with a freedom from harshness and overall sonic poise that served every record Art played. "The Japanese arm sounded every bit as beautiful as it looks," he summed up. (Vol.36 No.8 WWW)

KUZMA 4POINT: \$6675 ★

Designed by Franc Kuzma, this brilliant pivoted tonearm takes its name from its four-point bearing system: Four carefully arranged points contact four cups, permitting the arm to move in both the vertical and lateral planes while avoiding the chatter of gimbaled bearings and the instability of unipivot designs. It has an effective length of 11", a pivot-to-spindle distance of 10.3", an overhang of 0.6", an effective mass of 0.4oz, and a total weight of 3.63 lbs. Its removable headshell made swapping cartridges painless, while adjustment of VTF, VTA, antiskating, and azimuth were all relatively simple. With its outstanding immediacy, transparency, and overall coherence, the 4Point consistently exceeded Mikey's expectations. Compared to the combo of Continuum Cobra arm and Ortofon A90 cartridge, the 4Point with Lyra Titan i offered greater timbral, textural, and image solidity, said MF. "I'm in love," he concluded. Compared with the Continuum Audio Labs Cobra, the Kuzma sounded more natural and more energetic. "The Kuzma 4Point may be the finest tonearm out there, period," said MF. The Kuzma matched the Graham Phantom II Supreme's detail retrieval and neutrality but offered greater speed and coherence, said MF. Also offered with regular phono cables/no RCA box for \$6375. (Vol.34 Nos.9 & 10, Vol.35 No.7 WWW)

LINN EKOS SE: \$4950 ★

Outwardly identical to the original Ekos in all but color, the Ekos SE is machined from a titanium tube in an effort to smooth out resonant peaks, while its stainless-steel main pillar and bearing cradle work to maintain perfect bearing adjustment in the face of temperature extremes and user abuse. The "beautifully finished" SE comes packaged with a selection of tools, a Linn T-Kable interconnect, and a new iteration of Linn's cable clamp. With its strong, tight bass and solid aural images, the Ekos SE produced a "cleaner,

more dramatic, and more enjoyable" listening experience, said AD. "Other, more exotic arms may give better results in some settings, but I can't think of a more consistent—and consistently recommendable—tonearm. It's a Martin D-28, a BMW 3-series, a bottle of Bombay Sapphire: It will please any sane, reasonable person," he sums up. (Vol.30 No.10 WWW)

PEAR AUDIO ANALOGUE CORNET 2: \$2195

Designed by the late Tom Fletcher, of Nottingham Analogue, and descended from his popular Space Arm, the Slovenian-made Cornet 2 is a unipivot tonearm with a carbon-fiber armtube, said fibers being arranged longitudinally, according to the manufacturer. The Cornet 2's headshell, made of an unspecified material and bereft of a finger lift, is aligned straight with the armtube itself, though its mounting-bolt slots offer provisions for offsetting the cartridge. A falling-weight antiskating mechanism is provided, and an effective mass of 12.5gm and an effective length of 239mm are specified. MF found the Cornet 2's instructions lacking, and noted that, although "every parameter of the Cornet 2 is adjustable, a few are not easily set—the usual trade-off in a moderately priced arm." According to MF, when used with the similarly Fletcher-designed Pear Audio Analogue Kid Thomas turntable, the Cornet 2 contributed to a "smooth, refined sound" that many will find appealing. Moreover, compared to his experiences with earlier Fletcher-designed arms, MF suspected that "the Cornet 2 is faster, leaner, and better focused, despite the many similarities of construction." (Vol.38 No.1)

SME 312S: \$3099 ★

The 312S is a 12" tonearm with a tapered armtube made of pressure die-cast magnesium for strength, rigidity, and low mass. With fit'n'finish to match the no-nonsense precision of SME's 20/12 turntable, the 312S includes a secure sliding-track overhang-adjustment mechanism, a spring-loaded VTA post, and a silicone-filled damping trough with adjustable paddle. SME has produced "a tonearm that has all of the 12" arm's theoretical advantages and none of its disadvantages," MF said. (Vol.32 No.5 WWW)

SPIRAL GROOVE CENTROID: \$6000 ★

The Centroid is a fluid-damped unipivot design that gives the user fine adjustment of all relevant parameters. It was extremely quiet, with stunning resolution and clarity, and had an uncanny ability to reproduce the tonal and dynamic elements of deep bass notes. "The Centroid tonearm may be the best tonearm I've heard. It is not leaving my listening room," declared BD. The Spiral Groove SGL1-Centroid turntable-tonearm combo offered black backgrounds, rock-solid bass, natural tone color, and outstanding detail retrieval, said Mikey. A universal version with standard arm mount is also now available. (Vol.33 No.6 WWW, Vol.35 No.11)

SWEDISH AUDIO TECHNOLOGIES TONEARM: \$28,000

With an armtube made of carbon-fiber laminates—not the same as the woven fiber used in making most such things—and a massive, stainless-steel bearing yoke, Swedish Audio Technologies' 9" tonearm impressed MF from the moment he first clapped eyes on a prototype: "An SME V on steroids, I thought." The SAT's detachable headshell is made from some 40 plies of carbon fiber, and its bearings are large-diameter pivots of tungsten-carbide resting on sapphire V-jewels, with user-adjustable preloading. The SAT arm's statically applied downforce and filament-and-falling-weight antiskating mechanism are both uncalibrated. MF's verdict: "With the very first record I played... it was immediately obvious to me that the SAT was easily, and by a wide margin, the finest, non-sounding tonearm I have ever not heard." MF wants to rate this as a Class A+ tonearm. (Vol.38 No.7 WWW)

THOMAS SCHICK 12" TONEARM: 1260 EUROS PLUS SHIPPING \$\$\$ ★

Made in Germany and as of 2015 distributed direct by its manufacturer, the Thomas Schick 12" tonearm is intended to combine the greater-than-average length and mass of certain vintage models with the high-quality bearings of modern arms. It offers superb fit and finish, with a

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clean, spare bearing cradle and a smoothly solid pickup-head socket. Though lacking the spring-loaded downforce and other refinements of the EMT 997—and, thus, some measure of the more expensive arm's performance—the Schick is characterized by a big, clean, substantial sound, with an especially colorful bottom end: "a superb performer," per AD, who also verified the correctness of the Schick's geometry with Keith Howard's ArmGeometer freeware. According to Art, "The Schick tonearm is an outstanding value and easily the most accessible transcription-length arm on the market." Thomas Schick has now added to his line a proprietary headshell (€249) machined from resin-soaked "technical" graphite, with a mass (15.2gm) that makes it more suitable than most for use with cartridges of low to moderate compliance. AD bought the new headshell for himself and reported that, compared to his wooden Yamamoto headshell, the Schick offered "far tighter, cleaner bass." He was also impressed with how "cartridges mounted in the Schick suffer less breakup during heavily modulated passages." (Vol.33 Nos. 3 & 6, Vol.34 No.10, Vol.37 No.11 WWW)

VPI JMW MEMORIAL 3D-PRINTED 12"

TONEARM: \$3000

The JMW Classic 3D 12" tonearm is identical to the JMW Classic Signature of the same length—with one big difference: This unipivot's removable armwand is made, on a 3D printer, of an epoxy-like resin said to impede the transfer of vibrations. MF was very impressed with the new model's smooth, transparent, well-balanced sound, likening it in those regards to his reference Continuum Cobra tonearm, and declaring the Classic 3D the logical upgrade for present owners of the JMW Memorial arm: "It's not that the metal JMW arm is so bad—it's that the 3D-printed version is so good." AD, who has set up a JMW Classic 3D for friend Sasha Matson, reports being very impressed with the new arm's level of finish. (Vol.37 No.6 WWW)

VPI JMW-12.7: \$1700 \$\$\$ ★

Unipivot tonearm features vestigial antiskating, which disconcerted MF. Nonetheless, he enthused over its lush midrange, ultra-smooth top end, and rock-solid imaging and soundstaging: "Subjectively, it seemed to have lower distortion than any other pivoted arm I've heard, but part of that might be the result of its smooth frequency balance. Inner detail was outstanding." However, he added of the original 12.5 version, "I think there's a slight midbass exaggeration that may be part of the spreading warmth above this range, and which gives this arm its inviting midrange." BD says of the 12" version, "lowers the original's already low distortion. The background is blacker and the arm seems to float an infinite well of inner and low-level details. The tonal balance is more neutral, but combined with the TNT III or IV, is still warm and inviting." With the 12.5, Harry Weisfeld made small but important modifications to the 12" JMW that resulted in heightened rigidity, a reduced center of mass, and improved damping. What BD found most impressive was the "obvious-once-you-see-it" touch of the small V-groove machined into the top of the headshell. This allows the user to more easily gauge headshell tilt while setting azimuth. "Neat!" MF adds: "Luxurious midrange, low distortion, and ease of setup and use make this a very attractive arm if your 'table can handle the length." More recently, in addition to a streamlined model name, VPI's first transcription-length tonearm has come in for some mechanical refinements. Its unipivot bearing, and the jeweled cup within its bearing housing, have been improved. A weighted collar has been added to the counterweight, and can be rotated asymmetrically for azimuth adjustment. "Most important," according to MF, "[its] cantilevered platform has been made far more massive and sturdy." Additionally, an antiskating mechanism is now available, though not without the manufacturer's antipathy. Additional arm assemblies cost \$600. (Vol.20 No.1, Vol.24 No.12, Vol.25 No.3, Vol.37 No.5; see BD's review of the VPI HR-X in Vol.29 No.5 WWW)

VPI CLASSIC-JMW: \$1600 ★

An upgraded version of VPI's JMW Memorial 10.5i, the Classic-JMW, included with VPI's Classic 3 turntable, uses a new stainless-steel armtube, a stronger, more massive

bearing platform, and a more rigid base mount. Though lateral instability remained a problem, any adverse effects were inaudible, said Mikey. (Vol.34 No.10 WWW)

B

ABIS TAIL: \$1875

From the same Japanese firm that makes the heartily recommended 9" SA-1 tonearm comes the Abis TAIL, the L standing for long—as in 12". The TAIL has an S-shaped aluminum armtube, and its removable aluminum headshell is anodized black. Cup-and-point bearings are used for vertical movement, while the horizontal bearing is a traditional ball-and-race sort. AD found all bearings to be free of both friction and excess play. A spring-actuated antiskating device is fitted, while downforce is applied statically. The effective length is 325mm, and while the effective mass is not specified, the arm seems appropriate for use with medium- to low-compliance cartridges and pickup heads—an impression borne out in AD's listening tests: "The Abis tonearm allowed the Miyajima [Premium BE Mono II] ... to shine as a detail-retrieval champ of the first order," although he heard less bass weight than desired. AD also noted an inaccuracy in the TAIL's installation jig, advising prospective users: "Just remember that it may require an extra bit of attention in setting up." (Vol.38 No.1 WWW)

AUDIO ORIGAMI PU7: \$3000

Based on the Syrinx PU2 tonearm of the 1980s—a product that BJR, AD, and other *Stereophile* contributors have owned and loved—the Audio Origami PU7, from Scotland, is a pivoting arm with a gimbaled ball-race bearing. The PU7 seems better finished than its forebear, though creature comforts are thin on the ground: Adjustments of VTF and VTA depend on the user loosening one or more grub screws and repositioning uncalibrated parts, and antiskating is a simple thread and falling weight—but, as MF points out, the design "emphasizes rigidity over convenience." Used with the Palmer Audio 2.5 turntable, the PU7 contributed a notably velvety sound with a bottom end that was "well controlled and extended," said MF, who cautioned that "images were of less-than-pinpoint accuracy and somewhat larger than life." But the PU7 distinguished itself as "a fine tracker, and feels as if it has bearings of ... extremely high quality. Physically and sonically, it's a lot of tonearm for \$3000, though I think its tube needs better internal damping." (Vol.37 No.10)

CLEARAUDIO CLARIFY: \$1600 ★

A perfect partner for Clearaudio's Ovation turntable, the Clarify has a machined aluminum headshell with azimuth adjustment, a carbon-fiber armtube, a magnetic bearing, and a low-center-of-gravity counterweight with an integral mechanism for adjusting VTF. It uses Clearaudio's proprietary Direct Wire, a five-conductor configuration of copper with Teflon insulation, implemented as a direct run from the cartridge clips to a 1.2m tonearm cable terminated with RCA plugs. The Ovation-Clarify combo had a resolving, nuanced, musical sound, said EL. See listing for Clearaudio Ovation in "Turntables." (Vol.35 No.10 WWW)

ORTOFON TA-210: \$1994 ★

The 12" TA-210 is a pivoting tonearm with traditional gimbaled bearings for lateral and vertical movement, and a curved, damped aluminum-alloy armtube. Versatile and user-friendly, it comes with a removable cable, a plug-in headshell for use with standard-mount phono cartridges, and a simple, accurate installation jig. Compared to the EMT 997 and Schick Tonearm, the Ortofon lacked some scale, presence, and impact, but sounded consistently smooth, serene, and uncolored, with no apparent stressing on dynamic peaks, said AD. "A wise choice for a newcomer to the world of vintage-style phonography," he concluded. (Vol.35 No.10 WWW)

REGA RB303: \$595 \$\$\$ ★

Latest version of Rega's classic tonearm. See the Rega RP3 entry in "Turntables." (Vol.34 No.12)

SPERLING-AUDIO TA-1: \$9750

Available with a 10" or a 12" armtube—the price is the same in either case—the German-made Sperling-Audio TA-1 is a hanging-unipivot tonearm whose pivot point is magnetically damped. The armtube, of metal and wood,

has threaded weights for adjusting azimuth, and coarse and fine degrees of vertical tracking force; provisions for applying antiskating bias are not included. MF found the TA-1's overhang-adjustment regimen somewhat trying, and criticized the arm's many adjustment screws for being unlockable and thus possibly prone to resonating—problems that paled, in his view, in comparison to the lack of any provision to lock the armtube in place when not in use. When MF used the TA-1 with Sperling-Audio's L-1 turntable, he described the arm as having a sound of its own: "pleasing and intoxicating—a low-Q, low-amplitude character that subtly accentuated the lower midbass, adding a pleasing warmth ... without becoming obtrusive." (Vol.38 No.8)

VIV LAB RIGID FLOAT: \$4390–\$4990

The Viv Laboratory Rigid Float is a radically different tonearm: a design that combats tonearm skating forces and their distortions not with the application of antiskating—which the designer abhors—but by eliminating from his arm the headshell offset that, in tandem with the friction of the stylus in the groove, causes skating in the first place. Consequently, like the RS Laboratory arm before it, the Rigid Float's geometry eschews overhang in favor of *underhang*, the cartridge-alignment implications of which concerned MF—who also scratched his head over the nonrigidity of the VIV arm's turntable mounting arrangement and consequent less-than-optimal height-adjustment provisions. But MF was impressed with its unconventional bearing—"the pivot floats on a dark, magnetic, light-viscosity, ferrofluid-like oil that you inject into ... the front of the pivot housing"—and, in the end, was wowed by the Rigid Float's "gloriously smooth" midrange and "meaty, full-bodied" bass: "If you love to the exclusion of most everything else the romantic, vintage, midrange sound that some people insist is 'music,' the VIV Laboratory Rigid Float is made for you." (Vol.37 No.8)

VPI JMW-9: \$1000 ★

The shortest of Harry Weisfeld's JMW tonearm line, the JMW-9 comes standard with the Aries Scout turntable. (AD enthused about the combination's sound.) It uses a reverse-missionary bearing with a hardened tungsten-carbide point and a machined and hardened-steel set-screw for a cup. A quick-connect plug makes for easy removal and easy cartridge swapping, but as with all Harry Weisfeld designs, there is no antiskating mechanism. MF auditioned the 9" version of the JMW Memorial tonearm with VPI's Scoutmaster turntable. Unlike the original JMW Memorial, the 9" arm's main bearing is directly grounded to the plinth and the stabilizing ring surrounding the arm's bearing housing is fixed. The lack of a damping well results in a "Parkinson's-like trembling of the JMW when you use the finger lift or lower the arm via the cueing mechanism," which MF found disconcerting. Nevertheless, the arm appeared to be extremely stable: "The taut, focused, remarkably coherent performance of this 'table-arm' combo is testament to a fundamentally solid, well-grounded system that deals effectively with energy created at the stylus/groove interface." Some disagreement between AD and MF over the overall rating, but Class B seems appropriate. (Vol.26 No.2, Vol.27 No.9 WWW)

Editor's Note: There are currently no Class C or D tonearms listed.

K

Origin Illustrious 3C, Abis SA1.2 and 1.2B.

DELETIONS

Tri-Planar Mk.VII UL not auditioned in a long time.

PHONO CARTRIDGES

A

AIR-TIGHT PC-1 MAGNUM OPUS: \$15,000

See MF's review in this issue.

BRINKMANN PI: \$2700 \$\$\$ ★

The Pi moving-coil cartridge uses a motor built to Brinkmann's specifications by Benz-Micro, includes a Micro-

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Ridge stylus, and has a body of machined aluminum designed to control the dissipation of resonant energy. Though its tonal balance was slightly lean, the Pi's overall frequency extension and tracking ability were impressive, said MF. "The Pi cartridge strikes me as very competitive at and above its price," he concluded. (Vol.34 No.5 WWW)

CLEARAUDIO GOLDFINGER STATEMENT:

\$15,000 ★

The audacious Goldfinger Statement has a diamond embedded in the front panel of its 14K-gold body, and features EMF shielding and a resonance-damping, gold-fingered top plate. It uses 12 magnets, a 24K-gold coil assembly, and a boron cantilever with a Micro HD stylus. The unusual specs include a high weight of 17gm and a high output of 0.9mV; tracking force is 2.8gm. Though it lacked ultimate soundstage width, the Goldfinger Statement produced a "generous, voluminous midrange" and had outstanding dynamics, bottom-end extension and authority, and transient speed and clarity, said MF. (Vol.35 No.9)

EMT TSD 15: \$1950 \$\$\$ ★

The EMT TSD 15 is an A-style pickup head weighing just over 17.5gm and available with either EMT's proprietary diamond-shaped output-pin pattern or the more common SME square pattern. It has a high impedance of 24 ohms, a high output of 1.05mV, and a moderate recommended downforce of 2.5gm. The EMT's overall sound was open, clear, and transparent, with above-average presence, body, and color, and an outstanding sense of momentum and flow. "A fine all-arounder, combining starkly honest music-making with the sorts of refined sonic attributes most audiophiles cherish," said Art. Examining the EMT with a microscope revealed its distinctly small, sharp, spherical tip, which, AD conjectured, may be the reason for the stylus's exceptionally low groove noise. For special systems only, as it is a complete pickup head, not just a cartridge. (Vol.34 Nos.5 & 9 WWW)

FUUGA: \$8950

See MF's review in this issue.

HANIWA AUDIO SYSTEM HCTR01: \$5000 ★

Designed in Japan by Tetsuo Kubo and built by Y. Matsudaira of My Sonic Lab, the beautifully made HCTR01 moving-coil cartridge has a super-low internal impedance of 0.8 ohm and can track at an astonishingly low 0.6–1.0gm when used with Haniwa's HEQA01 Phono Equalizer. It uses a boron cantilever and a line-contact stylus assembly. While it lacked midrange warmth and texture, the Haniwa produced "a fully extended, ultraclean, remarkably transparent sound," said MF. Sold direct from Kubotek USA with a money-back guarantee. (Vol.34 No.11)

IKEDA SOUND LABS KAI: \$8500

The top model of a five-cartridge line, the Kai is made in Japan by Ikeda Sound Labs, a company created by Fidelity Research founder Isamu Ikeda. The Kai is a low-output (0.19mV) MC design whose boron cantilever sports a Micro-Ridge stylus. Its alumite body is topped with a plate of titanium, resulting in a high mass of 11.5gm—which goes hand in hand with a level of suspension compliance that MF described as "appropriately low." Using the low-impedance (2.5 ohms) Kai with his Ypsilon MC26-L transformer, MF enjoyed "explosive dynamic swings" and "an unmistakably deep, wide, and tall soundstage." He also praised the cartridge's "electrostatic-like transparency" and "fast and clean transients," while noting that the Kai's tonal balance "pushed toward the cool." Use with a high-mass tonearm is recommended. (Vol.38 No.6)

KISEKI PURPLEHEART (N.S.): \$3299

Following an absence from the market of nearly a quarter-century, Kiseki's handmade MC cartridges are back, manifested in two separate lines: New Old Style (NOS), built in 2010–2011 using a mix of old and new parts, and New Style (NS), which are new in every way. The Purpleheart NS is among the latter, and features a metal mounting plate with tapped holes and a solid-boron cantilever with an elliptical stylus. Specs include a 42-ohm internal resistance, 0.48mV output, and a recommended VTF of 2.46gm, in accordance with the Kiseki's moderate compliance. In MF's system, the Purpleheart NS produced "rich, supple sound with a tube-like tonality and musical flow," albeit with "less-than-full expression of macrodynamics."

All in all, MF found the Kiseki to be "a physical and sonic beauty. [It] offers a sophisticated sound well beyond what you'd expect at its \$3299 price." (Vol.38 No.3)

LYRA ATLAS: \$9500

With its off-center motor-retaining screw and asymmetrical design, Lyra's new top model represents designer Jonathan Carr's latest ideas on minimizing resonances. It has a body machined from a solid billet of aluminum, a diamond-coated boron cantilever, and a nude diamond stylus. The Atlas combined the Titan i's detail and transient speed with the Kleos's warmth and smoothness, said MF. "The Lyra Atlas is a complete success." (Vol.35 No.5 WWW)

LYRA ETNA: \$6995

Like Lyra's flagship, the Atlas, the Etna is machined from a solid billet of titanium and has a high-efficiency, X-shaped former and coil arrangement; a yokeless dual-magnet system; a cantilever rod of diamond-coated boron; and a Lyra-designed, line-contact stylus with varying radii. It weighs 9.2gm, has an optimum VTF of 1.72gm, and its recommended resistive load is between 104 and 887 ohms. As in all Lyra designs, the motor is built into the cartridge's body via a wire suspension held in place by a tiny screw. Compared to the Atlas, the Etna lacked dynamic drive and spatial resolution, but produced a harmonically rich, full-bodied, ultradetailed, and natural sound, said MF. "One of the most neutral- yet enticing-sounding cartridges I've heard, it's also one I can recommend for any system and for any sonic or musical taste," he concluded. (Vol.37 No.3 WWW)

MIYAJIMA LABS MADAKE: \$5895

As MF observed, "For all intents and purposes, the Madake is a Miyajima Kansui fitted with a mostly bamboo cantilever"—*madake* being the Japanese word for bamboo, and mostly referring to the fact that there's some aluminum in there, too. Compared to Miyajima's previous designs, this wood-bodied, low-output, moderately low-compliance stereo MC cartridge surprised MF by being a "faster performer that manages to considerably extend the top end without making it sound thin or bright." He concluded: "[If you] can afford it, you'll definitely want to add the Madake to your arsenal." (Vol.37 No.12)

MIYAJIMA LABS KANSUI: \$3600 ★

Like the Miyajima Shilabe, the Kansui uses a cross-ring motor design, weighs 10.4gm, has an internal impedance of 16 ohms, is fitted with a Shibata stylus, and has a curvaceous body of African Blackwood. Because it has a higher compliance, however, the Kansui can track at a significantly lower tracking force for greater speed and resolution. Though it lacked the Haniwa HCTR01's resolution of spatial information, the Kansui offered a meatier and more intimate sound, with forceful bass, rich textures, and solid images, said MF. (Vol.34 No.11)

MIYAJIMA LABS SHILABE: \$2995 ★

The Shilabe is a low-output (0.23mV), low-compliance design with an unusually high recommended tracking force of 2.5–3.2gm. Its Shibata stylus is attached to a large-diameter, old-fashioned-looking cantilever. Like Miyajima's Premium Mono, the Shilabe uses a patented "cross-ring" construction that centers the generator's fulcrum within the coil. Though it lacked the soundstaging and imaging of the Shun Mook Signature, the Shilabe had a sound that was "full-bodied, deep, and extremely well-defined," and offered "superbly coherent transient and harmonic presentation from top to bottom," said MF. AD also enjoyed the Shilabe's "consistently present, colorful, and downright chunky" sound. "It was the closest I've heard a stereo cartridge come to delivering the meat, the force, the sheer solidity of mono," he said. (Vol.32 No.9, Vol.33 No.10 WWW)

MIYAJIMA LABS ZERO MONO: \$1995

The Zero Mono cartridge has an output of 0.4mV, making it compatible with a wide range of moving-coil phono preamps. Compared to Miyajima Lab's Premium BE, the Zero produced a similarly big, rich, meaty sound, but offered improvements in image focus, clarity, transient detail, and bass control, said MF. "If you treasure your mono albums, get a Zero. It's infinitely better than any other mono cartridge I've heard," he summed up. (Vol.36 No.3)

ORTOFON ANNA: \$8924

Named after Russian soprano Anna Netrebko, Ortofon's new flagship moving-coil cartridge uses a high-efficiency magnet system for improved dynamics and impulse linearity over earlier Ortofon designs. It has a curved titanium body, a boron cantilever, and a nude Replicant stylus. Its low (0.2mV) output means it should be used with only the quietest phono preamps capable of considerable gain; an appropriate step-up transformer should provide the best results. Compared with the Lyra Atlas, the Anna sounded slightly warm and lacked bottom-end tightness and impact, but was more texturally refined, said MF. (Vol.36 No.5)

ORTOFON MC A95: \$6500

Ortofon's MC A95 retains the radical shape of its predecessor, the limited-edition MC A90, but now powdered titanium takes the place of stainless steel in its Selective Laser Melting (SLM)-formed body, a refinement for which the manufacturer claims better self-damping. That and other refinements add up to a level of performance that coaxed from MF this observation: "the A95 is the A90 on testosterone." The low-output (0.2mV) A95, whose specs indicate a slightly lower compliance than that of its predecessor, earned from MF praise for "wider dynamics [than the A90]—particularly in the bottom octaves—and a generally richer, more fully fleshed-out sound." He concluded: "the Ortofon MC A95 definitely improves on the MC A90's well-deserved reputation [as] one of the world's best-sounding phono cartridges." In a Follow-Up, MF found that the A95 had less "dynamic authority and just plain slam" than the Ikeda Sound Labs Kai, but distinguished itself with greater "tonal and textural expression." (Vol.38 Nos. 5 & 6)

ORTOFON XPRESSION: \$5669 ★

A unique blend of new and old technologies, the Xpression derives from Ortofon's cutting-edge MC A90, but is designed as a drop-in replacement for any G-style pickup head. It uses a Replicant 100 stylus, has a recommended downforce of 2.6gm, an impedance of 4 ohms, and a low 0.3mV output. Compared to AD's original Ortofon SPU, the Xpression sounded just as solid, colorful, and forceful, but was more detailed, open, tactile, and revealing of nuance and technique. "The difference was real: Love my older Ortofon though I do, the Xpression was clearly more dramatic, with no penalty in texture or color," said Art. (Vol.35 No.2 WWW)

ORTOFON 95TH ANNIVERSARY SPU: \$3400

Derived from Ortofon's SPU 90th Anniversary pickup head of 2008, the new SPU 95th Anniversary adds a few refinements, including a change from stainless steel to titanium for the internal frame—still manufactured via selective laser melting (SLM)—and an increase in magnet strength. Recommended tracking force is 3gm for the low-compliance SPU 95th Anniversary; the stylus profile is elliptical, the output 0.3mV. AD enjoyed his time with the new SPU: "It's a well-behaved, notably modern pickup that is quiet and imperturbable in the groove... yet it is also, identifiably, an SPU, with [a] solid sound and fine sense of drive." Recommended for use in tonearms of highish mass. (Vol.37 No.12 WWW)

SOUNDSMITH SG-200 STRAIN GAUGE MK.IV:

\$8590 ★

The SG-200 is a strain-gauge phono cartridge with six choices of interchangeable styli and a dedicated power supply and preamplifier. Two bright-blue tubular LEDs run vertically through the metal body's horizontal slats, giving the cartridge a unique look. Also unlike most cartridges, the SG-200 provides controls for setting vertical tracking angle and azimuth. Though it could sound somewhat cool and lacking in physicality, with a lean midrange and stingy sustain, the SG-200 produced incredibly clean, fast top-to-bottom transient attack, deep bass, airy highs, and spectacular transparency. "The SG-200 is a unique game-changing product," said MF. Price includes two SGS-5 styli; add \$100 for the SGS-6, a nude line-contact stylus with a ruby cantilever. (Vol.34 No.3 WWW)

SOUNDSMITH SUSSURRO: \$4800 ★

Designed and built in the US by SoundSmith's Peter Ledermann, the Sussurro is a low-output (0.3mV), low-mass

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(8.79gm), moving-iron cartridge intended to be used with an MC phono stage that can provide 60dB of gain. It has a wood body, a ruby cantilever, and a line-contact diamond stylus; its unique construction allows for adjustment of azimuth, vertical tracking angle, and stylus rake angle, all from the cartridge body. Though it lacked some resolution and detail, the Susurro was an exceptionally quiet and smooth tracker, and offered a slightly warm and lush overall sound, said MF. The Susurro's stylus's severe profile mandates precise settings of overhang, zenith angle, and especially SRA and VTA. (Vol.35 No.3)

STEIN MUSIC AVENTURIN 6 MK2: \$6495

Based on a Benz LP-S motor with a solid-boron cantilever and a micro-ridge stylus, the Aventurin 6 Mk.2 has a boxy, open-bottomed body made of layers of mahogany and carbon fiber. Its moderate weight of 11.5gm makes it an ideal match for tonearms of medium to high mass. Though it lacked the full-bodied sound of the more expensive Lyra Anna, the Aventurin was fast, clean, and natural, with a well-extended treble, solid bass, and rich midrange, said MF. (Vol.36 No.10)

TRANSFIGURATION PROTEUS: \$6000

For their new flagship MC cartridge, Transfiguration returned to the double-ring-magnet construction of earlier models, adding silver-wire coils with so few windings that an internal resistance of just 1 ohm is claimed. Nevertheless, output is specified as 0.2mV at 3.54cm/s (using the industry's standard of 5cm/s, the Proteus's output is actually closer to 0.28mV). The Proteus sports a PA-profile stylus at the end of its boron cantilever, and the moderate-compliance motor is said to perform well at a VTF of 2gm. Based on his experience with earlier Transfigurations—models known more for “getting out of the way” than for trying to make a “beautiful sound”—MF had high expectations; even so, he wasn't prepared for what he heard: “Even before [it] had a chance to fully break in and develop, what I was hearing put it up there with the best, most musically involving cartridges I've heard at any price.” As for value, MF described the Proteus as “expensive, but not stupidly so,” the latter sobriquet being something he reserves for cartridges that sell for \$10,000 and up. (Vol.37 No.10)

B

CLEARAUDIO MAESTRO V2 EBONY: \$1200

The ebony-bodied V2 is the most expensive moving-magnet cartridge in Clearaudio's line—and, quite possibly, the costliest MM cartridge period. In common with other MMs, the Maestro V2 has relatively high output (3.6mV), with concomitantly highish coil impedance and inductance; unlike other MMs, it isn't an especially high-compliance design—its tracking-force range is 1.8–2.6gm—and its Micro HD stylus and boron cantilever are not user replaceable. According to MF, the Maestro V2 “didn't have the speed or the high-frequency extension of a good moving-coil,” but it offered a great combination of “midrange richness, openness, and detail,” and it “tracked and traced well” every record MF threw at it. Figuratively. (Vol.38 No.4)

DS AUDIO DS-W1: \$8500

Price includes phono preamp/power supply. Unlike the well-documented if seldom-seen ELP laser turntable, which re-creates a music signal by bouncing light off the modulations of a record groove, the DS-W1 is an optical phono cartridge that uses the vibrations of a traditional playback stylus—in this case, a Shibata at the end of a boron cantilever—to modulate the otherwise steady output of an LED, aimed at a photosensitive plate: Because the stylus and cantilever are called on to move far less mass, the benefits are said by some to include less record wear and more faithful replication of the vinyl-encoded analog wave. In this regard, the DS-W1 is the direct descendant of the similarly seldom-seen Toshiba C-100P cartridge of the 1970s—and, indeed, the C-100P's developer assisted with the design of the DS-W1, which MF described as “a major breakthrough” capable of “revelatory transparency and spatial clarity.” But MF's experiences with the DS-W1 were troubled by a consistent and “distractingly overemphasized bass”—a flaw that he attributed to the DS-W1's

accompanying electronics, leading to the Class B rating. MF's verdict: “worth an audition—especially if DS Audio can upgrade their electronics and fix the bass problem.” (Vol.38 No.9)

LYRA KLEOS: \$2995 ★

Billed as a replacement for Lyra's classic Helikon, the moving-coil Kleos uses an Ogura boron cantilever fitted with a low-mass line-contact stylus, and includes Lyra's New Angle alignment system. Compared to the Helikon, the Kleos had a warmer sound, with greater delicacy and detail. While it lacked the resolution and dynamics of Lyra's Titan, something that just keeps it from Class A, the Kleos combined a neutral tonal balance with airy highs, a rich midrange, well-controlled lows, a wide soundstage, and solid, three-dimensional images. “Highly recommended, and without reservation,” said MF. (Vol.34 No.1)

MIYAJIMA LABS TAKUMI: \$1850

Like Miyajima's more expensive Shilabe, the Takumi has a body of sculpted African rosewood and uses the company's “cross-ring” motor assembly. Compared to the Shilabe, the Takumi has a slightly lower output (0.2 vs 0.23mV), a more forgiving stylus profile (elliptical vs Shibata), and is slightly lighter (9 vs 10.4gm), with a lower recommended tracking force (2.5 vs 3.2gm). Sonically, however, the Takumi more closely resembled its more expensive sibling, with a meaty and full-bodied sound that was only slightly less detailed, said MF. (Vol.36 No.10)

MIYAJIMA LABS PREMIUM BE MONO: \$1260

\$\$\$ ★

With its ebony body and pure-diamond conical stylus, the Premium Be Mono weighs 10.8gm, has a recommended tracking force of 3.5gm and an internal impedance of 6 ohms, and outputs 0.9mV. It produced “big, pure, meaty, midband mono physicality, and remarkable depth of soundstage,” said MF, who feels Class A would be a more accurate rating. “The Premium BE Mono is my favorite mono cartridge at any price.” The Premium Mono BE sounded “chunky, colorful, forceful, and fun,” said AD, who recommends Class B (High Value). Also available as part of Robyatt Audio's Ultimate Mono Record Playing System (\$3000), with the Robyatt Audio Mono transformer and Tektron Italia Mono phono preamp. (Vol.33 No.11, Vol.35 No.6 WWW)

MIYAJIMA LABS PREMIUM MONO: \$1050 ★

The Premium Mono monophonic cartridge uses Noriyuki Miyajima's “cross-ring method,” whereby the cantilever's fulcrum is centered precisely within the former on which the coil is wound. Recommended downforce is 3.5gm. In addition to its “near-total rejection of surface noise,” the Premium Mono provided a forceful sound with “fine impact” and an “excellent sense of scale,” said AD. “A staggering good value, but for special systems only.” (Vol.32 No.8 WWW)

MIYAJIMA LABS SPIRIT MONO: \$850

Like all Miyajima cartridges, the Spirit Mono uses a proprietary “cross-coil” motor, the fulcrum of which is optimized for linear dynamic performance; like all of the company's mono cartridges, this one has a single coil and an 18µm-radius spherical stylus tip—and is unresponsive to vertical groove modulations. In short, the Spirit Mono is *true mono*. According to HR, the low-compliance, moderate-output (0.7mV) Spirit Mono “had a very seductive way of making records sound full-bodied and tangible. Images of musicians were realistically scaled, and there was always a noticeable sense of space.” The Spirit Mono is also available with a 76µm stylus for 78rpm records, or in a version called the Spirit Mono High, with an output of 3.7mV. (Vol.37 No.10 WWW)

ORTOFON CG 25DI MONO PICKUP HEAD:

\$902 \$\$\$

The oldest product design from the second-oldest audio manufacturer on Earth (Quad gets the nod for having lasted even longer), Ortofon's CG 25DI pickup head is a single-coil monophonic MC motor of high output (1.5mV) and low compliance (the recommended downforce is 4gm). Its spherical stylus is made with a full 25µm radius—hence the model designation—thus restricting the CG 25DI's use to records mastered with a true mono cutter head. As AD observed, “This is among the hallowed

few cartridges that really communicate everything that's special about 1950s and '60s mono LPs from the likes of Verve, Prestige, Clef, [and] Columbia.” With its three-figure price, the CG 25DI also offers exceptionally high value. (Vol.38 No.4 WWW)

ORTOFON 2M BLACK: \$755 ★

Partnered with the budget-priced Audio-Technica AT-PEQ3 phono preamp, the “ridiculously good” Ortofon 2M Black produced a bright, open sound with “surprising heft and slam.” Because its Shibata stylus is sensitive to rake angle, the 2M Black should be used only with tonearms that permit adjustment of VTA and SRA, Mikey advised. (Vol.32 No.12)

SOUNDSMITH CARMEN: \$799.95

The ebony-bodied Carmen, a moving-iron design, offers medium compliance (22µm/mN) and high output (2.2mV) and features a nude elliptical stylus at the end of its aluminum cantilever. HR found the Carmen to be “conspicuously chameleon-like” in his system, exhibiting a different character with each different tonearm, turntable, and phono preamplifier he used it with. He especially enjoyed the Carmen when it was partnered with his vintage Thorens TD 124 turntable and SME 3009II tonearm, enjoying the combination's “sparkle and dynamics.” Quoth HR: “It was like the sun reappearing from behind a cloud.” (Vol.38 No.6 WWW)

ZU AUDIO DL-103: \$439 \$\$\$ ★

Zu improves on Denon's original design by trading the DL-103's plastic body for one built of 6061 “aircraft” aluminum and then binding the magnet, base, and pole piece with a ferrous-based epoxy. This consistently colorful, well-textured—, engaging-sounding cartridge built on the Denon's sense of impact while taming its forward presentation. AD: “The Zu doesn't just lay giants: It rips their beating heart from their chests, shows it to them, finishes them off, then chases their souls and drags them down to hell. Recommended.” One of HR's references. (Vol.30 Nos.10 & 12 WWW)

C

DENON DL-103R: \$379 \$\$\$ ★

In production since 1962, the DL-103 is a “resolutely old-fashioned” cartridge with a two-piece plastic body. It uses a two-piece aluminum cantilever to drive a cross-shaped armature wound with several turns of fine-gauge copper magnet wire. Its square-shank nude diamond stylus is ground to a spherical tip. Though the Denon offered excellent bass depth and impact with an overall exciting and “pleasantly forward” presentation, its high-frequency response peak made bright recordings sound “a bit more forward than ideal.” Nonetheless, AD deemed it “a superb cartridge and a remarkable buy.” Compared to Denon's new DL-A100 100th Anniversary moving-coil phono cartridge, AD's old DL-103 was tubbier in the bass, but just as dynamic and dramatic. Performance with the a stock spherical stylus tip squeaks into low Class B, he adds, saying that “apart from various Miyajimas and the always-recommendable Miyabi 47, it's hard for me to think of another standard (non-pickup-head) type of cartridge that has this much impact and drama. (Vol.3 No.9, Vol.30 Nos.10 & 12, Vol.34 No.12 WWW)

DYNAVECTOR DV 10X5: \$550 \$\$\$ ★

Besides subtle changes in magnet material and coil-winding techniques, the latest iteration of Dynavector's classic moving-coil design has threaded mounting holes for simple installation and alignment. It weighs 7.3gm, has an output of 2.5mV, and uses an elliptical stylus tip and aluminum cantilever. Recommended load impedance is anything greater than 1000 ohms; recommended tracking force is 1.8–2.2gm. Thanks to the Dynavector's clarity, immediacy, and presence, “music was consistently more dramatic and involving, while never sounding unnecessarily harsh, aggressive, or forward,” said SM. One of ST's favorite cartridges. AD: “This colorful, well-balanced, chunky-sounding cartridge played music extremely well, with a bonus of very fine stereo imaging....More money can buy more drama, impact, scale, and transparency.... But the Dynavector 10X5 should give you most of what I think you need at a bargain price.” (Vol.26 No.10 WWW)

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PHONO PREAMPS/MOVING-COIL STEP-UP DEVICES

PHONO CARTRIDGES

Vol.35 No.11 WWW)

GRADO PRESTIGE ME+ \$150

The polycarbonate-bodied Prestige ME+ Mono has an elliptical stylus at the end of the company's trademark four-piece (telescoping) aluminum cantilever. Although not a single-coil cartridge, its design is true mono inasmuch as the coils are physically oriented to respond to only lateral modulations. Output is a healthy 5mV, the recommended load is 47k ohms, and recommended VTF is 1.5–2gm. HR found the Grado to be great at suppressing surface noise; more important, on records ranging from solo gut-string guitar to opera, the Prestige ME+ Mono proved to be musically insightful and consistently rewarding: "The Grado's boldly cinematic sound triggered all the aesthetic emotion I required." HR has, in fact, purchased the Grado for use as his daily driver. (Vol.37 No.12 WWW)

NAGAOKA MP-500: \$699 ★

The MP-500 has a samarium-cobalt magnet, a permalloy shield casing, a SuperFineline line-contact stylus, and a low-mass boron cantilever. When used with the Thorens TD 309 turntable, the Nagaoka had a slightly forward, somewhat cool overall sound, but outclassed the TD 309's stock Audio-Technica AT95E in terms of image solidity, detail resolution, and bass extension, said MF. (Vol.34 No.2)

ORTOFON 2M BLUE: \$236 \$\$\$

Affordable moving-magnet cartridge with user-replaceable elliptical diamond stylus. With the Blue mounted in a Music Hall Ikura turntable and arm, BJR found that "the transients and bloom of the string quartet were reproduced with no trace of coloration or smear." Superb transient articulation and dynamics. "Competes with cartridges at double its price. Also an excellent match for both the Music Hall Ikura and VPI Nomad turntables," he adds. (Vol.37 No.12 WWW)

REGA ELYS 2: \$295 \$\$\$ ★

See the RP3 entry in "Turntables." Price is \$200 when purchased with that turntable. (Vol.31 No.7, Vol.34 No.12 WWW)

SHURE SC35C: \$75 \$\$\$

Very affordable, DJ-heritage moving-magnet cartridge that HR found worked superbly well on the Pioneer PLX-1000 turntable. (Vol.38 No.7 WWW)

D**AUDIO-TECHNICA AT95E: \$74 ★**

When used with the Thorens TD 309 turntable, the Audio-Technica AT95E produced large, exuberant images, but lacked the solidity, detail resolution, macrodynamics, and bass extension of the more expensive Nagaoka MP-500, said MF. (Vol.34 No.2)

ORTOFON 2M RED: \$99 \$\$\$

The least expensive of Ortofon's 2M moving-magnet cartridges (the series name is shorthand for MM), the Red offers a 5.5mV output, a replaceable elliptical stylus, highish compliance, a recommended tracking force of 1.8gm, and a square-front body with threaded mounting holes, for ease of installation. SM declared the 2M Red's dynamic range "vastly wider" than that of the less expensive Ortofon OM 5E, and praised the new cartridge's clean, fast, grainless sound. SM's verdict: "If you're looking for a high-value cartridge... the 2M Red is an excellent place to start." Borderline Class C. (Vol.37 No.5, Vol.38 No.2 WWW)

DELETIONS

Golding Legacy not auditioned in a long time..

PHONO PREAMPS/MOVING-COIL STEP-UP DEVICES

A+**AUDITORIUM 23 HOMMAGE T1 & HOMMAGE T2: BOTH \$4995 ★**

Over twice the size and weight of the less expensive Standard transformer, the Hommage T1, designed as a companion to Auditorium 23's Solovox loudspeaker, is a statement product. It has a textured-paint finish, attractive

white-oak endcaps, and input and output resistances of 3 and 2530 ohms, respectively. The Hommage T1 shared the Standard's excellent timing, flow, and overall drama, but produced a much larger soundstage; and while the Audio Note AN-S8 was slightly richer, the Hommage T1 proved more exciting, said AD. Pairing the Hommage T1 with an EMT OFD 25 mono pickup head resulted in unsurpassed musical and emotional impact, he noted. The Hommage T1 provided more timbral color, more shimmer, and a larger overall sound than did Bob Sattin's CineMag 3440A device, found AD. Outwardly identical to the T1, the Hommage T2 takes the same uber-perfectionist approach and applies it to EMT's high-output, high-impedance cartridges and pickup heads: the TSD 15, the OFD 25, and so forth. Unusually for a transformer designed around such motors, the Hommage T2 has a high turns ratio, and consequently very high gain; it shouldn't work—yet it does, brilliantly. The combination of the Hommage T2 and an EMT OFD 25 delivers the most dramatically impactful, tonally vivid phono playback ever heard by AD, who adds, "The T2 is so good, it's sick!" (Vol.30 No.10, Vol.32 No.8, Vol.33 No.6 WWW)

YPSILON VPS-100: \$26,000 ★

Made in Greece, the moving-magnet VPS-100 is beautifully built and housed in a substantial aluminum case. Justifiably rated Class A+, it uses a 6CA4 rectifier tube and choke filter, while RIAA is accomplished passively with zero feedback using a transformer-based LCR network. All internal wiring is done by hand, point to point. While it couldn't quite match the bottom-octave punch, definition, and extension of the Pass Labs XP-25, the Ypsilon produced a more transparent, silky, airy overall sound, said MF. "It produced an absolutely intoxicating blend of stupefyingly extended high frequencies, resolution, clarity, and transient precision, along with tight, deep, nimble, nonmechanical bass, and an ideally rich midrange," said MF and has since purchased the review sample. (Vol.32 No.8, Vol.34 No.3)

A**B.M.C. AUDIO PHONO MCC1: \$4190**

The Phono MCC1 moving-coil phono preamp uses a current-injection input and has a fully balanced, single-ended, class-A output stage. High-quality parts include 10 ultralow-noise transistors, balanced-current capacitors, inductance-free polystyrene capacitors, thin-film metal resistors, gold-plated printed circuit boards, and a shield of copper-plated iron. Internal jumpers allow the user to select among three levels of gain, standard or Neumann RIAA, a subsonic filter, and various bass settings. Though it lacked some bass control, the MCC1 produced "liquidity and harmonic richness along with warmth, speed, drive, three-dimensionality, and pitch-black backgrounds," said Mikey. "B.M.C.'s Phono MCC1 is exceptional, and easily among the best MC phono preamps available today at any price," he concluded. On the test bench, the MCC1 exhibited low noise and low distortion. (Vol.36 Nos.6 & 9 WWW)

BOULDER 1008: \$13,000 ★

The impeccably built 1008 is a fully balanced, dual-mono design with XLR inputs and outputs. In addition to RIAA, the 1008 includes the Decca, Columbia, and EMI curves for LPs released before 1954, and DIP switches mounted on the Boulder's personality cards select between MM and MC cartridges. It had a slightly soft overall sound, with a bloomy midrange and a forgiving top end, but was capable of producing massive dynamic swings, said MF. "Superb measured performance" and "a standard of construction that is to die for," praised JA. (Vol.33 No.7 WWW)

CHANNEL D SETA MODEL L: \$3799 ★

Designed to take full advantage of Pure Vinyl's digital RIAA correction, the beautifully built Seta Model L includes balanced and single-ended inputs, balanced unequalized outputs, variable gain, and a built-in, rechargeable battery power supply. Recordings made using the Seta Model L's optional RIAA-equalized outputs were "models of clarity, definition, tonal accuracy, detail resolution, and spatial coherence," said MF. "There is no doubt that the Seta Model L has been superbly engineered," praised JA. Compared to the Liberty B2B-1, the Seta Model L lacked some mid-

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bass energy, but did a better job of preserving recorded ambience, said JA, who also admired the Channel D's superb measured performance. Optional internal RIAA compensation module adds \$1199. (Vol.33 No.8; Vol.36 No.12 WWW)

DYNAMIC SOUNDS ASSOCIATES PHONO II: \$13,500

The Phono II is a versatile, full-function phono preamp with: three XLR/RCA MM/MC inputs, each independently adjustable for resistive or capacitive loading via front-panel buttons; six loading choices; four gain levels (40, 50, 60, and 66dB); and front-panel buttons for selecting mono playback, inverting polarity, activating a high-pass filter, and adjusting azimuth. Four all-FET gain stages use internal feedback, with passive RIAA equalization; the dual-mono design uses no global feedback and no step-up transformers. Connecting, configuring, and using the Phono II was a simple pleasure. The overall sound was extremely fast and transparent, with crystalline highs, clean attack transients, and a full bottom end, said Mikey. However, while the Phono II was generally quiet, it produced some odd mechanical noises when partnered with certain cartridges. The "odd mechanical noises (produced) when partnered with certain cartridges," which last time relegated the DSA to Class B, turned out to be motor induction leakage that a running modification has remedied—hence this thus well-deserved kick upstairs to Class A. (Vol.36 No.10)

HAGERMAN AUDIO LABS TRUMPET

REFERENCE: \$7200

Hagerman's beautifully built, top-of-the-line phono preamp uses four each 12AX7 and 12AU7 dual-triode tubes in a class-A, zero-feedback design. It employs choke-regulated power supplies; DC heaters; passive split RIAA equalization; and a balanced, JFET-based, moving-coil input stage. Six front-panel pushbuttons allow the user to choose among four choices of EQ (AES, Decca/EMI, RIAA, Columbia/NAB), stereo or mono playback, MM or MC input, polarity, two options of MC gain, and eight options of MC loading. Though it lacked some bass definition and dynamic impact, the Trumpet produced a relaxed, graceful sound, with an excellent sense of space, a rich midrange, and generous sustain, said Mikey. (Vol.37 No.2)

HANIWA AUDIO SYSTEM HEQA01: \$5000 ★

The nicely made HEQA01 has moving-magnet and moving-coil inputs and a built-in degausser. It uses electromagnetic damping to permit cartridge tracking as low as 0.6–1.0gm. When used with Haniwa's HCTR01 MC cartridge, the HEQA01 produced a fast, clean sound with exceptional transparency, spaciousness, and three-dimensionality, but lacked some midrange warmth, said MF. Sold direct from Kubotek USA with a money-back guarantee. (Vol.34 No.11)

KONDO GE-1: \$10,000

Made in Japan, the GE-1 is a moving-magnet (34dB of gain) phono preamplifier with separate, switchable input pairs for two phono cartridges. It uses three Electro-Harmonix 6072 dual-triode tubes, which provide a two-stage, zero-feedback gain circuit, and a cathode-follower final stage for low output impedance. Like Kondo's matching Overture integrated amplifier, the GE-1 uses high-quality parts throughout, including silver wiring, handmade capacitors, bespoke resistors, a solid-copper ground plate, and a tuned chassis made from a combination of steel, brass, and aluminum. Though it was leaner and less boldly colorful than AD's Shindo Masseto, the GE-1 sounded more open and modern, with a pleasantly extended top end and exceptional senses of scale and drive. (Vol.36 No.11 WWW)

LAWM INDUSTRIES LP 2.1 DELUXE: \$8990

The LP2.1 Deluxe—the adjective refers to this version's upgraded power supply, polystyrene bypass caps, and 20.5-lb damping panel—is a single-box stereo phono preamp with tube rectification and pairs of Russian-made 6C3P and 6C45P-E triode tubes for the signal path. The dual-mono design has separate, switchable RCA-jack inputs for MM and MC cartridges, the latter of which address a pair of Jensen 1:10 step-up transformers for additional gain. Controls are minimal, with no provisions for

varying the 400-ohm load of the MC inputs—although, as MF observed, that figure is "a good compromise for cartridges with internal impedances of about 40 ohms or less." MF found the "smooth-sounding, well-detailed" LP2.1 to be remarkably free from noise—even quieter than some solid-state phono preamps—and observed that "the sound of MCs through the LP2.1's transformers was impressively fast, detailed, open, dynamic, and resolving—all without added glare, grain, or etch." At the same time, he was even more impressed when preceding the Lamm's MM stage with the Ypsilon MC-10L step-up transformer (\$6000), which "seriously upped the sound quality along with the price." Still, MF considers LP2.1 Deluxe "fully competitive with anything at or near that price." (Vol.38 No.3)

LEHMANN DECADE: \$2099

AD tends to prefer the sound, with an MC phono pickup, of a phono preamplifier *plus* an MC step-up transformer—yet was pleasantly surprised when he replaced both with the Lehmannaudio Decade. This two-chassis, solid-state phono stage offers adjustable input impedance and gain—the latter up to 66dB, for very low-output cartridges—and a switchable soft-rolloff filter. When substituted for both the CineMag Sky 30 transformer and the phono section of his Shindo Masseto preamplifier, the Decade presented AD with exceptional clarity, believable colors and textures, and "satisfying" force: "Yes, the Lehmannaudio preamp could be made even more explicitly forceful with the addition of a good transformer. . . . Considered on its own, the Lehmannaudio is easily the most impactful solid-state phono preamplifier I've ever experienced." (Vol.37 No.5 WWW)

MICHAEL FEHLAUER MONOPHONIC VARIABLE

EQ PHONOSTAGE: \$1500 \$\$\$

Designed and made in Germany by mono enthusiast Michael Fehlauer, the Monophonic is a single-channel, solid-state phono preamp with user-selectable gain for moving-coil, high-output moving-coil, and moving-magnet cartridges. Rather than using traditional switches, the Monophonic's equalization settings are arrived at with two stepless, continuously variable potentiometers, thus offering far greater potential for fine tuning and ease of use. Included is a list of suggested settings for the EQ schemes of various record labels, including the modern RIAA standard. The sound was "stunningly clear, yet very colorful and well textured," and Fehlauer's suggested EQ settings were almost always dead on, said Art. "The Monophonic didn't just sound good: It was fun. And it made my record collection seem even bigger than it is by making it even more listenable than it was." (Vol.36 No.12 WWW)

NAGRA BPS: \$2200 ★

The tiny, lightweight, battery-powered BPS is loosely based on Nagra's more expensive VPS, but uses bipolar transistors instead of tubes. It provides 51dB gain in MM mode and 62dB in MC. With its "upfront transient speed, clarity, and focus," the BPS was "a more neutral, accurate phono preamp than the lush, romantic VPS," said Mikey. Overall, the BPS sacrificed sustain and richness for attack and rhythm. Compared to the Audio Research PH7, the BPS was "lean, fast, tight, and clean," lacking delicacy and harmonic complexity. MF: "If your system needs an injection of excitement, the BPS is guaranteed to do just that." While the BPS sounded good plugged into the AC, it sounded better when powered by its own 9V battery, added FK, who bought the review sample. (Vol.32 Nos.6, 8, & 10 WWW)

PARASOUND HALO JC 3+: \$2995 \$\$\$ ★

The Halo JC 3 is a true dual-mono design with a large R-core transformer power supply. Construction quality is first rate, top-shelf parts are used throughout, and the stout, heavy chassis is beautifully finished. In the JC 3, designer John Curl favored purity over adjustability, offering minimal loading options: 100 ohms or 47k ohms for moving-coil cartridges and 47k ohms for moving-magnet cartridges. Its fully direct-coupled RIAA equalization circuit is based on the circuit used in Curl's famed Vendetta Research SCP-2, while the JC 3's output stage is a true dual-differential, balanced design. In addition, the JC 3 has a built-in AC line conditioner, and its power supplies are modeled after those found in the extremely quiet JC 2 line

stage. Though it lacked the dynamics and transparency of either the Pass Labs XP-25 or Ypsilon VPS-100, the JC 3 combined superb musical grip and control with a timbrally and texturally ideal midrange. "The JC 3 represents the best current value in a phono preamp that I know of," said MF. Though it lacked the Sutherland 20/20's tonal richness and punchy sense of pace and drive, the Halo JC 3 produced a detail-rich sound with tight, extended lows, a clean midrange, and carefully drawn images on a huge, open soundstage. "If your tastes run to purity, clarity, neutrality, and detail, you'll be hard-pressed to find a better phono stage for anywhere near \$2350," BD concluded, recommending a Class A rating. The JC 3 sounded remarkably similar to BJR's reference, the Vendetta SCP-2, but lacked some high-frequency purity and ambience recovery. JA noted superb measured performance. Plus version adds variable cartridge loading for the MC input. (Vol.34 Nos.3 & 10; Vol.35 No.2 WWW)

PASS LABS XP-25: \$10,600 ★

This two-chassis, moving-coil/moving-magnet design offers two inputs and has front-panel controls for several options of gain, capacitive loading, and resistive loading. It uses Pass's XP-20 power supply, which comprises low-noise transformers, RC filtering, and capacitive multipliers. The XP-25's first gain stage uses low-noise transistors and a controlled open-loop gain, while its circuit employs new low-noise, thin-film, surface-mount resistors. The XP-25 produced deep bass, explosive dynamics, and good three-dimensionality, but lacked the Ypsilon VPS-100's top-end air, transparency, and transient speed, said MF. (Vol.34 No.3)

PBN OLYMPIA PX-1: \$22,000

Although MF wasn't impressed with the styling of this American-made two-box phono pre—okay, he called it "butt-ugly"—he found a lot to love in its musical performance. Designed and made by Peter B. Noerbaek, the Olympia PXi is a fully balanced, dual-differential pre using cascaded JFETs in its first gain stage and a complementary MOSFET source-follower in its output stage. Gain is switchable between 60 and 70dB, and the user can select among six different resistive loads, ranging from 50 ohms to 47k ohms; input and output jacks are XLR only. As for the Olympia PXi's sound, the prospective owner is advised: "Strap yourself in!" MF elaborated: "The grip the PBN had on the music, from top to bottom of the spectrum, was immediately obvious and almost physically demanding to experience—but in a relaxed and very pleasing way. Dynamics were limitless. The terms *bass extension* and *bass control* took on new meanings." For all that, MF wrote, "the PBN was also able to express instrumental liquidity and textural subtlety." (Vol.37 No.9)

PHASEMATION EA-1000: \$15,000

The Japanese-made EA-1000 is built into separate left- and right-channel cases of copper-plated steel adorned with thick, brushed-aluminum faceplates. The first selector knob on each allows the choice between RIAA stereo and three mono curves—Columbia, Decca *ffrr*, and an "all-purpose 78rpm" curve—while additional controls adjust MC impedance and gain and select among three inputs: two MC, one MM. The single-ended, hybrid EA-1000 uses three dual-triode tubes per channel, and its hefty outboard power supply is built around a 5U4G rectifier tube. In addition to praising its very quiet performance, MF noted the EA-1000's "textural delicacy and detail" and its knack for delivering "rich, saturated harmonic colors." Through the Phasemation, he said, "music was finely and delicately drawn, sounding sweet but not cloying, feathery but not smotheringly soft." MF cautioned fans of large-scale music that, through the EA-1000, "the bottom-most frequencies were somewhat less than fully realized." (Vol.37 No.9)

ROGERS HIGH FIDELITY PA-1A: \$7400

Roger Gibboni's first phono preamplifier uses three tubes per channel for MM cartridges, and adds to its MC inputs a pair of internal step-up transformers. (Even more gain can be had, albeit at a slight cost in noise, by substituting for the PA-1A's 12AU7 tubes a spare pair of 12AX7 tubes, also supplied.) Capacitive and resistive loading are user adjustable, and a mute switch is included. Build quality is,

as MF wrote, "impressive by any standard," and tube life is expected to be in the neighborhood of 10,000 hours. MF praised the PA-1A's "glorious, mesmerizingly rich midrange, and the overall drive and musical flow for which tubed phono preamps are renowned," while noting "the less-than-taut-and-punchy bottom end for which they're also known." MF also discovered in the Rogers phono pre some susceptibility to hum with both MM and MC cartridges, necessitating care with cable choice and physical placement. His verdict: "If you listen mostly to acoustic jazz and/or classical music, the Rogers PA-1A, paired with a cartridge that's fast, open, and extended on top, could be your ticket to long-term satisfaction." (Vol.37 No.12)

SIMAUDIO MOON EVOLUTION 810LP: \$13,000

The first phono preamp in Simaudio's Moon Evolution line of cost-no-object designs, the fully balanced, dual-mono 810LP is a beautifully built, rigid component weighing 40 lbs and measuring 18.75" W by 4" H by 16.81" D. Its four-layer circuit board uses a five-point, gel-based, floating suspension system derived from the Moon Evolution 850P preamplifier, while the power supply features a high-quality toroidal transformer and multiple filtering and voltage-regulation stages. DIP switches on the bottom panel provide unprecedented configurability: 64 impedance loads, from 12.1 ohms to 47k ohms; 16 capacitance settings, from 0 to 1120pF; 16 gain settings, from 40 to 70dB; and RIAA or IEC equalization. The 810LP had a cool, dry overall sound with exceptional transparency, clean transients, muscular macrodynamics, and delicate microdynamics, but lacked harmonic richness, soundstage size, and top-end air, said MF. Can be upgraded with Simaudio's Moon Evolution 820S power supply (\$8000). (Vol.35 No.12, Vol.37 No.11, 820S WWW)

SUTHERLAND ENGINEERING PHONO BLOCK: \$10,000/PAIR *

The Phono Block is a stripped-down, optimized, no-compromise design made of two completely separate but identical monophonic units. Each Phono Block itself comprises two heavily shielded, individual subchassis, one for the power supply and one for the audio stage, linked by the front and rear panels. The Phono Block offers one pair of inputs, two parallel pairs of outputs, a choice of three grounding schemes, and a built-in white-noise generator. Plug-in cards allow the user to select loading and gain. Like Sutherland's battery-powered designs, the Phono Block had an uncanny ease and purity but a more realistic and energetic sense of timing and pace, and created a larger, more enveloping soundstage, said BD. JA noted superb measured performance. (Vol.35 No.1 WWW)

THRAX ORPHEUS: \$21,500

Made in Bulgaria, the Orpheus is a vacuum-tube phono stage that uses a low-noise D3a pentode tube wired as a triode for both moving-magnet gain and to feed its constant-impedance RIAA section. The equalized signal feeds a Russian triode tube to provide the necessary output gain, loaded by a Hashimoto isolation transformer; the additional gain required by moving-coil cartridges is provided by an amorphous-core Lundahl 1931 transformer with 1:8 and 1:16 selectable primaries. The Orpheus has three switchable inputs—two RCA and one XLR, the latter for use balanced cartridges/tonenarms. Though it lacked some top-end extension and low-end impact, the Thrax produced a rich overall sound with a well-controlled bottom and fully fleshed-out midrange, said MF. (Vol.36 No.12)

YPSILON ELECTRONICS MC26-L STEP-UP TRANSFORMER: \$6200

Because MF is not a gear slut, he does not own a selection of current-amplification phono preamplifiers—both by his own admission. For now, that vacuum has been filled by the loan of the Ypsilon MC26-L step-up transformer, the model number of which derives from the transformer's 26x turns ratio. According to MF, the MC26-L is "designed for use with very-low-impedance cartridges," provides 28.3dB of gain, and presents cartridges with a load of 70 ohms. (Vol.38 No.6)

YPSILON MC10 & MC16: \$2800 *

The MC10 transformer produces 20dB of gain and is intended for use with cartridges having an output range

of 0.4–0.6mV. Its custom double-coil transformers are shielded with mu-metal and potted in 10mm-thick enclosures coated with soft iron-nickel. Though it lacked the "shimmering clarity" of the TruLife Audio Reikon, the Ypsilon MC10 produced an "exceptionally expansive and deep" soundstage with solid, dimensional, life-size images, said MF. The MC16 step-up transformer sounds identical to Ypsilon's MC10 but adds 4dB of gain. Compared to the Music First step-up trannie, the MC16 sounded more open, transparent, extended, and three-dimensional, said MF. (Vol.32 No.8, Vol.35 No.6)

ZESTO AUDIO ANDROS 1.2: \$4700

Made in the US, the Zesto Andros PS1.2 is a dual-mono tubed phono preamplifier with built-in step-up transformer and eight loading options. Its curvaceous, retro-modern exterior doesn't allow for front-panel controls, but the rear panel is clean, spacious, and logical. Separate moving-magnet and moving-coil inputs permit the simultaneous connection of two tonearms. The Zesto had an addictive, warm overall sound, with plenty of detail, impact, and grace, said MF. "It's among the more enjoyable and satisfying phono preamplifiers I've auditioned at any price," he concluded. (Vol.36 No.3)

B

AUDITORIUM 23 STANDARD: \$995 \$\$\$ *

Designed and voiced for use with Denon's DL-103, the Auditorium 23 Standard uses two sealed trannies in a non-descript aluminum case, and offers input and output resistances of 7.8 and 505 ohms, respectively. With Denon, Zu, EMT, and Benz cartridges, the sound was "dramatic without being brash, and consistently full-bodied and colorful," said AD. The Auditorium was "slightly coarser" than the Audio Note AN-S8, lacking some sweetness and color, but "a bargain" nevertheless, AD sums up. (Vol.30 No.10 WWW)

BLUE HORIZON IDEAS PROFONO: \$1299

See HR's review in this issue.

BOB'S DEVICES CINEMAG 1131: \$1195 *

Designed and made by Bob Sattin in North Carolina, the original CineMag step-up transformer is built into a rugged little cast-alloy box, with a toggle switch for gain selection and another for grounding. It uses a pair of CineMag 3440 transformers, switchable between low- and high-gain settings. Build quality was excellent, with all electrical joints made using an American Beauty resistive soldering station. Compared to the built-in step-up in AD's Shindo Masseto preamplifier, the CineMag was more colorful and punchy, with better timbral distinctions between instruments, approaching the performance of the much more expensive Auditorium 23 Hommage T1. "Nothing less than wonderful," Art said. CineMag 1131 phono transformer is switchable between high and moderately low gains (turns ratios of 1:40 and 1:20, respectively), and features gold-plated connectors, and a ground-lift switch. Compared to the internal Lundahl transformers in AD's Shindo preamplifier, the CineMag 1131 offered greater impact, immediacy, and emotional intensity; compared to the Silvercore One-to-Ten transformer, the CineMag sounded "just as dynamic and punchy, but was also a little bit richer and far, far bigger," he said. The 1131 is borderline Class A. (Vol.33 No.6, Vol.35 No.5 WWW)

EAR 834P: \$1895 ECONOMY MODEL: \$2595 DELUXE MODEL *

Tim de Paravicini-designed, three-tube (12AX7) MM stage that also offers, for MC use, a pair of step-up transformers (3–50 ohms). MF: "The 834's sound was absolutely gorgeous in the midband, with a touch of 'golden glow,' and an overall spaciousness and enticing musical wholeness....The 834P's bottom-end delivery was well-extended though a bit loose, if only slightly so....[Its] high-frequency extension and transient performance perfectly balanced its bottom: not sharp and etched...but not soft or overly romantic....A slightly sharp, fast-sounding cartridge should really get this thing singing." Compared to the GSP Audio Era Gold MkV, BJR found that the EAR 834P exhibited more detail, air, delicacy, and body in the midrange, with more detailed and extended highs, but with rounder, slower bass performance. ST is a long-time

owner of the 834 and loves it. Add \$700 for chrome Deluxe version. (Vol.20 No.7, Vol.26 No.8, Vol.28 No.1 WWW)

GRAHAM SLEE REFLEX M: \$1240 *

Like Graham Slee's previous designs, the lightweight Reflex M is housed in a small aluminum case and is powered by an outboard 24V DC power supply. RIAA equalization is applied actively with the negative feedback loop. There are no loading options. Compared to the Graham Slee Era Gold MkV, the Reflex M offered superior image solidity, transparency, and top-end extension, said MF. (Vol.35 No.6)

LEBEN RS-30EQ: \$2695

Designed to match Leben's CS300 integrated amp, the robustly built CS-30EQ has a decidedly old-fashioned look, with wood side panels and a gold-toned faceplate. It incorporates a pair of common dual-triode tubes for phono gain, but uses a CR-type equalization circuit rather than the more traditional negative-feedback type. A specially made "orient-core" power transformer is employed to minimize hum and noise. Combined with the CS300, the CS-30EQ delivered a rich, punchy, nuanced sound, said AD, who feels it a high value. "A pleasure to look at, a pleasure to use, and delightful to hear," he concluded. JA was bothered by the CS-30EQ's very high output impedance, however, which restricts the CS-30EQ's compatibility with preamps. (Vol.34 No.11 WWW)

LEEMA ACOUSTICS ESSENTIALS: \$749

See AD's review in this issue.

LFD PHONOSTAGE LE: \$1295 \$\$\$ *

PHONOSTAGE LE SPECIAL: \$1795 *

Minimalist in design and appearance, the LFD Phonostage LE combines 28 resistors, 24 capacitors, 4 regulators, 2 epitaxial diodes, 2 op-amps, and 1 transformer in a pleasant-looking chassis of extruded aluminum. It has a fixed input impedance of 47k ohms and can be configured to provide appropriate gain for moving-magnet (39dB) or moving-coil (53dB) cartridges. Despite its modest design and price, the LFD was "a sonically refined, musically involving, downright fun piece of gear," with a nice sense of touch, good weight and impact, and beautifully rich timbral colors, said AD. Upgraded with multistrand PC-OCC input wiring, multidiameter silver output wiring, taller viscoelastic isolation feet, and a larger power transformer, the Phonostage LE Special (\$1895) offered greater nuance, touch, detail, and scale for a more compelling listening experience, felt Art. "The measured performance of both versions was first-class," said JA. (Vol.34 No.6 WWW)

LIBERTY AUDIO B2B-1: \$1749 *

Made in the US, the all-FET, class-A B2B-1 comes in a heavy-duty aluminum chassis with a handsome black-anodized faceplate. In addition to its chassis-mounted RCA input and output jacks, the B2B-1 provides single input and output XLR jacks for use as a fully differential mono phono preamp. Jumpers offer five choices of resistive loading and two choices of gain. Though it lacked the Lejonklou Slipski's midrange richness, the B2B-1 produced an extremely quiet, authoritative, ultradynamic sound with deep bass, clean transients, fast attacks, and precise images. "It's a mini Boulder 1008," Mikey praised. The B2B-1 is one of the best-measuring phono preamps in JA's experience. "Nice. Very nice," he said. Solid factory-direct with a two-week return policy. (Vol.34 No.10; Vol.35 No.6 WWW)

MANLEY CHINOOK: \$2400 *

Made in the US, the Chinook is a one-box, tube-and-FET-cascade, MM/MC phono preamp. A pair of dual-triode 6922 tubes produces the gain, while a second, direct-coupled pair drives the output. Resistive and capacitive loading are selectable via rear-panel DIP switches. Though it lacked the slam and intensity of Manley's much more expensive Steelhead, the Chinook had a subtly warm overall sound, with clean transient attacks, generous sustain and decay, reasonably taut bass, and good soundstaging and imaging, said MF. (Vol.35 No.8)

MUSIC FIRST AUDIO STEP-UP TRANSFORMER:

\$3100 *

The impeccably built Music First comes in an attractive aluminum case and uses Stevens & Billington TX103 nickel-core transformers. Three turns-ratio options (1:5, 1:10,

MONITOR AUDIO

Silver 2

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- Hi-Fi Choice
Dec. 2014

Silver 6

PRODUCT OF THE YEAR

- SoundStage, 2014

"You need to hear them. Pronto."

- What Hi-Fi?
Dec. 2013

Silver 8

"I've been looking at speakers for \$3,000/pair or less for a while, and have not heard any that I would prefer to the Monitor Audio Silver 8."

- Kalman Rubinson
Stereophile, Jan. 2015

Silver 10

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- Spencer Holbert,
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and 1:20) and six loading options (10k, 20k, 30k, 40k, 80k ohms, and Open Circuit) are selectable via Swiss-made ELNA silver-contact rotary switches; internal connections are made with 0.6mm single-strand, silver- and Teflon-coated wire. Compared to the Ypsilon MC16, the Music First lacked transparency, top-end extension, and transient snap, said MF. (Vol.35 No.6)

MUSICAL FIDELITY M1VINL: \$1199 ★

Based on circuitry used in Musical Fidelity's more expensive kW phono stage, the versatile M1VINL has front-panel pushbuttons that allow the user to choose between MM and MC inputs, eight capacitance settings, 10 loading options, and RIAA or IEC equalization. Compared to Manley's Chinook, the M1VINL's sound was somewhat dry and slightly dark but inviting overall, with clean, fast attacks; solid, three-dimensional images; well-extended bass; and a rich, warm midrange. MF summed up: "Musical Fidelity's M1VINL is as easy to recommend as it is to listen to." (Vol.35 No.9)

NVO SPA-II: \$7000

Imported from Cyprus by Sounds of Silence, the SPA-II is an all-tube, MC/MM phono preamp with a simple aluminum chassis. It has no step-up transformers, but provides 62dB of gain; MC loading is done with RCA or XLR plugs fitted with resistors. The SPA-II ran very warm but was exceptionally quiet; it produced sweet highs, a warm midrange, and well-controlled, full-bodied bass, said MF. (Vol.36 No.7)

PTE MMMC-R: \$1595 ★

Made in the US, this MM/MC phono preamp is housed in an attractive wooden case and contains a full complement of gain and loading options selected via DIP switches. In moving-coil mode the PTE produced compact, well-focused images, an expansive soundstage, and very good macrodynamics. In moving-magnet mode, however, the PTE sounded "flat, cardboard, and glary," said MF. Changes in production to the MMMC's MM section are said to improve its sound. JA's measurements of a current production sample showed that the MMMC offers superb behavior via both its MC and MM inputs. Current production has increased power-supply voltage and uses active RIAA equalization and low-tolerance film capacitors. While the original version sounded "flat, cardboard, and glary" in MM mode, the revised version offered "tube-like richness and warmth," said MF, hence the promotion to Class B. (Vol.34 No.10, Vol.35 Nos.2 & 6 WWW)

ROBYATT AUDIO MONO: \$675

Simple inside and out, the True Mono SUT step-up transformer is made to Robyatt's specifications by AK Audio of Brooklyn, New York, and comprises just a single transformer and some bits of wire and connectors in a clean copper case. Fit and finish were rough. The True Mono SUT worked well with every mono cartridge AD had on hand and exhibited a "tremendous sense of scale and cavernously deep bass response." Also available as part of Robyatt Audio's Ultimate Mono Record Playing System (\$3000), with the Miyajima laboratory Premium Mono BE phono cartridge and Tektron Italia Mono phono preamp. (Vol.35 No.6 WWW)

SOUNDSMITH MCP2: \$999.95 \$\$\$ ★

Similar in appearance to the Soundsmith MMP3, the MCP2 offers 62dB gain and continuously variable loading from 10 to 5k ohms. It had a smooth, well-balanced overall sound with a slightly warm midrange, a moderately deep soundstage, and fair bass extension. Mikey found that the MCP2's overall smoothness made long listening sessions easy, but turning the volume up too far resulted in excessive glare. Compared with the far more expensive Ypsilon VPS-100, the MCP2 exhibited a tendency toward brightness and electronic haze, said MF. (Vol.34 No.10, Vol.35 No.3)

SUTHERLAND INSIGHT: \$1400 \$\$\$

The dual-mono, AC-powered Insight has a case of cold-rolled steel with a powder coat of baked-on epoxy and uses Wima polypropylene-film capacitors, Dale/Vishay metal-film resistors, and gold-plated RCA and internal jumper jacks. Gain and loading options are adjustable. Compared with the Musical Fidelity M1VINYL, the Insight offered greater dynamic thrust and slightly more

transparency but lacked midrange warmth, said MF. "The Insight is easy to recommend," he said. This phono pre lacks the drive and impact of the best units I've heard, and is also slightly short on texture, but it's wonderfully quiet and pure-sounding, with a nice sense of flow, sums up AD. He advises owners of early-production units to call the factory to determine if their Insights are in need of an upgrade: an IC replacement that most users will be able to perform themselves without difficulty. (Vol.36 No.8, Vol.37 No.10 WWW)

C

LEHMANN AUDIO BLACK CUBE STATEMENT:

\$449 \$\$\$

The bearer of Lehmannaudio's loftiest product name is in fact their least expensive phono preamplifier: a solid-state device built into a single (not counting the wall wart) and decidedly nonfancy aluminum box. The 1.75" by 4" by 4.25" Statement offers the user a choice of four gain settings (31, 41, 51, or 61dB) and three input-impedance selections (100, 1k, and 47k ohms), the latter supplemented with open slots on its circuit board into which the user can insert the loading resistors of his or her choice. SM was won over by the Statement's dynamic and rather bold, forward sound, especially when compared with his reference, the more reticent NAD PP-3. Above all, SM was impressed by the Statement's high value: "At \$449, it strikes me as a bargain . . . dynamic and robust, with a great sense of space." (Vol.37 No.5 WWW)

MUSICAL FIDELITY V90-LPS: \$229 \$\$\$

Musical Fidelity's new V90 line of small (6.6" by 4" by 1.8"), affordable, Taiwanese-built electronics includes the V90-LPS phono preamplifier, offering two separate pairs of inputs—one for MM (47k ohm impedance), another for MC (100 ohm impedance)—selectable by means of a pushbutton toggle. ST, who insists that, "For jazz, analog is superior to digital," tried the V90-LPS in place of his tried-and-true EAR 834P phono stage. His verdict: "Good enough and then some. It's detailed, sweet, and dynamic, and flexible enough to accommodate almost any MM or MC cartridge." (Vol.37 No.4)

SCHITT MANI: \$129 \$\$\$

See HR's review in this issue.

SOUNDSMITH MMP3: \$649.95 ★

The modest MMP3 provides 43dB gain, comes in a nicely machined aluminum case, and is powered by a 24V wall wart. It produced very quiet backgrounds and reasonably good dynamics, but bass extension and punch were only okay, its imaging was slightly diffuse, and its sound suffered overall from a slight metallic haze. "It's what you can expect for \$400 [price when reviewed]," said MF. "If that's what you can afford, the MMP3 at least gets the job done quietly and cleanly." HR opined that, with his Ortofon and Grado cartridges, the MMP3 "leaned a little toward soft and dark, and a lot toward invisible." (Vol.34 No.10, Vol.38 No.6 WWW)

TEKTRON ITALIA MONO: \$1350 ★

Made in Italy exclusively for Robyatt Audio, the Mono Phono phono preamplifier is housed in a wood-frame box with a solid-copper top that doubles as a ground plane. The Tektron's power supply uses an onboard mains transformer with an EZ80 full-wave rectifier tube for the rail voltage and a silicon rectifier bridge for the heater voltages. Gain is supplied by a pair of 12AX7 dual-triode tubes, which share the signal path with a passive RIAA filter. Fit and finish were excellent. The sound was "workmanlike," with a slightly bright tonal balance, decent musical flow, and a nice sense of presence, said AD. Also available as part of Robyatt Audio's Ultimate Mono Record Playing System (\$3000), with the Miyajima laboratory Premium Mono BE phono cartridge and Robyatt Audio True Mono SUT step-up transformer. (Vol.35 No.6 WWW)

D

BOZAK MADISSON CLK-PH2: \$19.95 \$\$\$

Small, dark, and distant: That's how SM described the sound of this small, dark, Taiwanese phono preamplifier, available for sale through the mail-order megalodon of your choice. So what do you want for 20 bucks (plus



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PHONO PREAMPS/MOVING-COIL STEP-UP DEVICES

shipping): to live forever? For that kind of money, SM says, the Bozak Madison CLK-PH2 is "totally recommended." Extra points for performing humbly without an external power supply; bonus point for having the courage to add, at least phonetically, the word *click* to the name of a phono product. (Vol.37 No.5 WWW)

NAD PP4: \$199 \$\$\$ ★

The simple, small (5.3" W by 1.7" H by 1.6" D) PP 3i has circuitry identical to that of NAD's PP 2 phono stage, but adds a line input and a 16-bit, bus-powered A/D converter with USB interface for digitizing LPs via a Mac or PC, and includes user-friendly VinylLite software. Used as a standard phono preamp, the PP 3i was neutral, delicate, and resolving, with a rich midrange, fast transients, and strong senses of coherence, pacing, and rhythmic consistency, said BJR. "A superb value," agreed JA. current version is called the PP4—same circuitry but now has a level control and an automatic power-down feature. (Vol.33 No.4 WWW)

NO CLASS DISTINCTION

REK-O-KUT RE-EQUALIZER MONO RECORD-SPECIFIC EQUALIZER: \$369 ★

Built into a small metal box attached to a rack-width panel of black aluminum, the Rek-O-Kut Re-Equalizer is designed to work with the gain and EQ of an existing phono preamp, making it "perhaps the least expensive and simplest of all 78rpm-specific equalizers on the market," said AD. Included in the owner's manual are several pages of thorough EQ recommendations for various labels and two pages of helpful tips on record labels and matrix numbers. Though it added a very slight veiling to the sound, the Re-Equalizer proved effective, useful, and fun. (Vol.32 No.1 WWW)

SENTEC EQ11: \$2500

The Sentec EQ11 is a four-tube phono stage that provides an input impedance of 45k ohms, approximately 30dB of gain, and RIAA phono equalization. What set the EQ11 apart from other such MM-appropriate preamps are five additional, switch-selectable EQ curves for the most common types of vintage record, including those for early Columbia LPs and Decca (and other) 78s. The Sentec's raison d'être, per HR: "If you start buying a lot of collectible old records pressed before 1965, you'll certainly notice that the music on some labels sounds a lot better than the music on others. The purpose of the Sentec EQ11 is to make many of those differences go away." HR said the Sentec EQ11, used with the Miyajima Spirit Mono cartridge, "can show you a lot of what you still haven't heard from your old records. This combo... not only makes the records of the past sound good, it makes them sound the way your brain knows they're *supposed* to sound." Note that the EQ11's gain and input impedance won't suit the majority of MC cartridges, for which an outboard step-up transformer is suggested. While photographing the EQ11, JA hoisted it onto his test bench and found that, despite some minor differences in gain, the shapes of the various EQ curves were consistent from channel to channel—and correlated with HR's observations. The THD+noise percentage was extremely low, and harmonic distortion was "fairly low and almost entirely second harmonic in nature," although intermodulation distortion was higher than expected. His verdict: "Despite its modest appearance and wall-wart power supply, Sentec's EQ11 offers respectable measured performance to accompany its flexibility of equalization." (Vol.37 Nos. 10 & 12 WWW)

K

Sutherland Duo.

DELETIONS

Boulder 2008 discontinued; Trinity Electronic Design Phono not currently available in the US; Bellari MT502 transformer, Rogue Audio Ares, Simaudio Moon 310LP,

Vitus Audio MP-P201 Masterpiece, all not auditioned in a long time.

SACD, DVD-A, & CD PLAYERS & TRANSPORTS & MEDIA PLAYERS

Editor's Note: SACD and DVD-A player ratings are based on how they sound with their respective hi-res media, not CD.

A+

ANTIPODES DX REFERENCE MUSIC SERVER: \$6500-\$7500

See JA's review in this issue.

BRYSTON BDP-2: \$2995

Essentially a beefed-up BDP-1 (reviewed by LG in Vol.34 No.6), the BDP-2 replaces the original's 0.5GHz processor with a 1.6GHz Intel Atom N450 and upgrades its single-amp linear power supply with a larger toroidal transformer spec'd to provide 10 amps of peak current. In addition, the BDP-2 has two Ethernet connectors (instead of the BDP-1's one), six USB ports (instead of four), a new eSATA connector, and accommodations for an internal SSD data-storage card. Compared to the original, the BDP-2 was just as detailed and dynamic, but offered significantly faster load times and produced highs that were more effortless, said LG. The latest improvements "greatly enrich this digital player's versatility and value," he concluded. (Vol.36 No.10 WWW)

DSC PUCCINI: \$18,999 ★

The Puccini, the least-expensive model in the new dCS line, is a one-box SACD/CD player with both balanced and unbalanced analog outputs; it has pairs of digital inputs and outputs, and can be partnered with the external Puccini U-Clock (\$5499), which offers 24-bit/192kHz support as of the summer of 2011 and adds a USB input. (DSD over USB was scheduled for the summer of 2012.) The Puccini employs dCS's Ring DAC and the bomb-proof UMK5 Esoteric transport mechanism, while the U-Clock's USB port uses a Texas Instruments TAS 1020B USB receiver chip operating in asynchronous mode. With its convincing low frequencies, outstanding midrange clarity, "righteous sense of musical flow," and state-of-the-art measured performance, the Puccini produced a sound that allowed JA to almost forget he was listening to recordings. The V1.2 firmware upgrade eliminates the low-level, low-frequency idle tone JA discovered with SACD playback, and adds three new low-pass filters for CD playback and external 44.1kHz-sampled data: Classic, which has the same linear-phase characteristic as the Puccini's earlier DSD filter; Long, said to have better anti-imaging performance than Classic; and Asym, free from pre-ringing but with a larger degree of post-ringing on transients. JA heard no substantial difference between the Classic and Long filters, but with the Asym filter engaged there was a greater ease to the overall sound and images were more dimensional. "Highly recommended." (Vol.32 No.12, Vol.33 No.10 WWW)

DSC VIVALDI: \$108,496/SYSTEM AS REVIEWED

The latest dCS digital playback system comprises the Vivaldi DAC (\$34,999), which can decode every digital resolution from MP3 to DSD and DXD, provides 10 filter options (six for PCM, four for DSD), and offers every digital input other than Ethernet; the Vivaldi Upsampler (\$19,999), which can upconvert even the lowest-resolution MP3 data to 24/384, DSD, and DXD, or any format in between; the Vivaldi Master Clock (\$13,499), containing two groups of four clock outputs, which can be independently set; and the Vivaldi Transport (\$39,999), a smooth, quiet, quick-booting SACD/CD drive based on TEAC's Esoteric VRDS Neo disc mechanism, controlled by dCS-designed signal-processing electronics, and capable of upsampling CDs to DSD or DXD. In addition to updated casework and cosmetics, the Vivaldi products use a complete revision of dCS's Ring DAC topology, increasing the Ring DAC's available dynamic range and decreasing its jitter. Though setup was complicated, the Vivaldi components produced

"a texturally supple, delicate, musically involving sound filled with color and life," said MF. On the test bench, the Vivaldi measured superbly, improving on dCS's Scarlatti in almost every way. "Wow!" said JA. (Vol.37 No.1 WWW)

KRELL CIPHER: \$12,000 ★

Outwardly similar to Krell's earlier Evolution 505, the Cipher weighs 29 lbs and measures 17.3" W by 6" H by 17.3" D. Its aircraft-grade aluminum case is available in silver or black, and has rounded edges and slotted sides for a graceful appearance. Like the 505 and other components in the Evolution series, the Cipher incorporates Krell's proprietary CAST current-drive circuitry. Whereas the 505 had a single stereo D/A converter, the Cipher uses a pair of 24-bit/192kHz DACs, which deliver higher current to the analog stages and expand the dynamic range by 3dB. The Cipher excelled at "revealing the finest subtleties of a musical passage, untangling the knottiest complexities, and showering light on the tonal colors of a voice, an instrument, or an ensemble," said FK. Compared to the Audio Research Reference CD9, the Cipher was just as open, detailed, and emotionally compelling, but sacrificed some harmonic bloom for leading-edge definition, said FK. JA noted superb measured performance. (Vol.35 No.5 WWW; Vol.36 No.10 WWW)

MARANTZ NA-11S1 MEDIA SERVER: \$3499

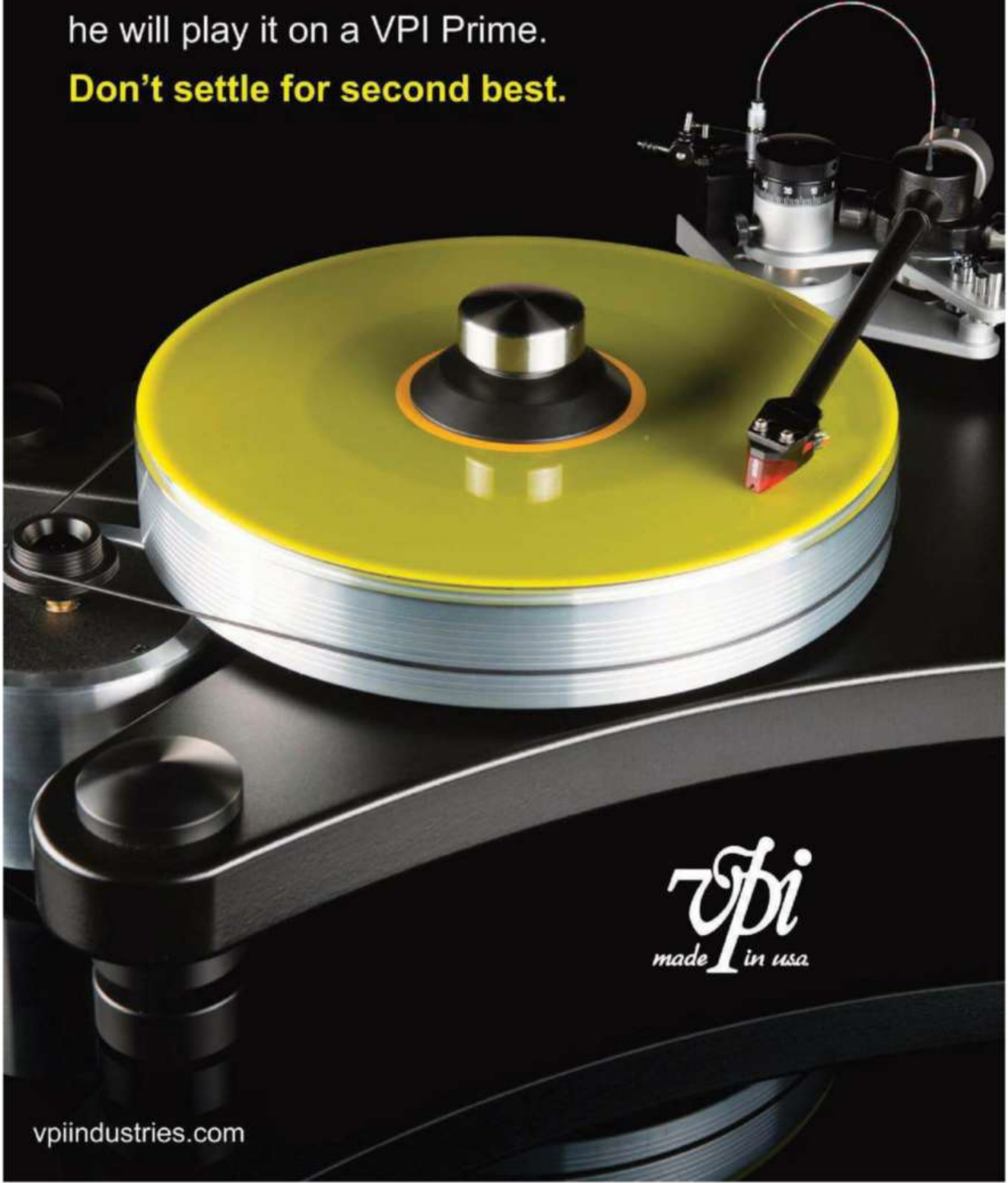
Launched to celebrate Marantz's 60th anniversary, the NA-11S1 is a remote-controlled, network-connected media player and D/A processor with two user-selectable digital filters and direct access to SiriusXM, Pandora, Spotify (separate subscription required), and Internet radio. A front-panel type-A USB connector can be used both to connect an iPod and to play up to 24-bit/96kHz files from a USB memory stick, while a rear-panel USB2.0B port allows the NA-11S1 to decode high-resolution PCM and DSD audio streamed from a PC. Though it can play WMA, MP3, ALAC, WAV, and FLAC files, the NA-11S1 is incompatible with AIFF files. The player also has a front-panel headphone jack, coaxial and optical S/PDIF outputs (on XLRs), and balanced and unbalanced analog outputs (on RCAs). The Marantz held its own against the 12-times-more-expensive MSB Diamond DAC IV, with a sound that was smooth, warm, and natural, only slightly sacrificing leading-edge definition, dynamics, and sense of pace, said JA. "This is a first-rate D/A converter that offers sound quality competitive with the best at a relatively affordable price," he summed up. (Vol.36 No.10 WWW)

MERIDIAN SOOLOOS SYSTEM: \$7000-\$10,500

DEPENDING ON OPTIONS ★

Originally branded as Sooloos, this hard-drive-based networked music system includes the Source:One system controller with 24-bit/192kHz converters sourced from RME, two-channel analog and digital outputs, and four-port Ethernet switch; the Store/TwoStore hard drive with mirrored storage for the contents of over 2000 CDs (encoded in the lossless FLAC format); and the Control:One, a 17" LCD touchscreen display/interface with CD drive. Additionally, Sooloos's ControlPC software can be used to control the system and manage hard-drive data. Setup and use were simple and intuitive. "Using the Sooloos got me more deeply involved with my music library than at any time since I began collecting many years ago," commented JI. "If you have thousands of albums on a music server, there is simply no better way to manage them," he adds. Linked to the Meridian Reference 861 pre-pro via its S/PDIF output, the Sooloos produced dynamic, involving performances. "When used as a digital source for a quality DAC, the Sooloos was as good as any other CD source I've tried," praised KR. JI notes as of February 2009 that almost a year after he first set up the Sooloos, it still holds its own against iTunes and other server products that have appeared in the last 12 months. As of summer 2009, the Control:One touchscreen interface became the Control 10 and has a handy S/PDIF out, which means you can use the DAC of your choice. All of the Control 10's networking hardware is contained in its slim base; it offers a wealth of connectors, including S/PDIF and Meridian SpeakerLink outputs, DC power in, and an Ethernet port, and allows the importing of hi-res audio and WAV files. In addition, many of the Sooloos's stock features have been made

If your hi-fi dealer loves vinyl,
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The image shows a VPI Prime turntable, a high-end audiophile component. It features a prominent yellow dust cover on the platter, which is mounted on a silver-colored metal base. A black tonearm is positioned over the platter, and a red and black stylus is visible at the end of the arm. The turntable is set against a dark background, and the overall aesthetic is clean and professional.

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more intuitive while reducing the number of interim steps for faster management of your music library. The Control 15 (\$7500), the latest version of the Sooloos touchscreen, comes with a 500G internal hard drive, while the Media Drive 600 (\$5000), the current RAID 1 housing component, has room for a mirrored pair of 2TB hard disks. The Control 15 lacks a DAC but is now compatible with virtually all non-DRM file types, and its S/PDIF output supports resolutions up to 24-bit/96kHz. JI: "I still don't think there's a better overall music-server system for the music lover and audiophile who wants to do away with the clutter of CDs and iTunes" and agrees with MF that the Control 15 was fully competitive with the cost-no-object MSB disc transport. (Vol.31 No.9, Vol.32 No.10, Vol.35 No.7 WWW)

MSB PLATINUM DATA CD IV: \$3995 ★

Designed to match MSB's Diamond DAC IV, the Platinum Data CD IV transport is compatible with CDs or WAV files (up to 32-bit/384kHz) on DVD-R, and provides coaxial, TosLink, AES/EBU, and MSB Network outputs. It spins CDs at up to 40 times the real-time rate, then rereads each sector to ensure correct data retrieval; if it finds any differences, the MSB assumes that all reads were incorrect, and adjusts spin speed, tracking, and laser focus as many times as necessary to achieve a "perfect" result. While the MSB outclassed the Oppo BDP-83, offering greater detail, scale, and dynamics, JI was hard-pressed to pick a favorite between the MSB and his Meridian Sooloos server. Signature Transport Power Base adds \$3495. (Vol.35 No.10 WWW)

NAD MASTERS SERIES M50 DIGITAL MUSIC PLAYER: \$2499

Offered by NAD as "computer audio without the computer," the Masters Series M50 looks like a high-end disc player—its front-mounted, slot-loading CD mechanism allows it to function as such—but is, in fact, a 24-bit/192kHz file player. Intended for use with an external file-storage device and an outboard D/A converter—it lacks an internal hard drive, and its varied output jacks are digital only—the M50 supports most PCM files, as well as the cloud services Rdio, Slacker, Tidal, Tuneln, WiMP, Qobuz, and HighResAudio. As for ripping files, unless the M50 doesn't detect a storage device—in which case it simply plays whatever CD is fed into its slot—its control software gives the user a choice of prompts or defaults, automatically indexes the rips, and retrieves from the Internet all metadata and "artwork." In our review, the M50 played music files from both its companion NAD Master Series M52 Music Vault storage device (\$1999) and an Ethernet-connected NAS on JA's home network, and worked well with both NAD's Master Series M51 DAC (\$1999) and the Auralic Vega converter, although JA preferred the more robust-sounding Auralic. Overall, JA rated the M50 "a true high-end source." (Vol.37 No.5 WWW)

PS AUDIO PERFECTWAVE MEMORY PLAYER: \$3999

"Listening to familiar recordings, recent as well as some from the early days of CD, I heard more musical detail from them than I previously had. This detail was not a matter of exaggerated treble, which can give an impression of increased detail, but was genuinely higher resolution manifested by greater differentiation among the sounds of instruments and rhythmic patterns," said RD about CD playback in his enthusiastic review. (Vol.38 No.2 WWW)

A

AESTHETIX SATURN ROMULUS: \$7000

The Saturn Romulus is a robustly built, remote-controlled, tubed CD player-DAC. Its digital section uses Gordon Rankin's Streamlength asynchronous USB protocol, a Motorola DSP56362 chip in the filter section, a Burr-Brown PCM 1792A DAC chip, and includes a full complement of digital inputs that decode every resolution up to 24-bit/192kHz. The analog circuit is a zero-feedback design, with both balanced and unbalanced outputs, driven by two 12AX7 and two 6DJ8 or 6922 tubes. Though it lacked the image specificity and soundstage depth of the Benchmark DAC1 USB, the Romulus combined excellent dynamic impact and bass slam with sweet mids and

highs, said JI. "The design, engineering, and build quality are top-notch for its price—and for the tube enthusiast, it's a no-brainer," he concluded. Though the Romulus measured well overall, JA discovered that its high analog noise floor obscures its effective resolution of digital data with >16-bit word lengths. Switched-resistor volume control adds \$1000. (Vol.36 No.10 WWW)

ASTELL&KERN AK240 PORTABLE PLAYER: \$2500

"The luxury choice in high-resolution portable music players," according to ML, the Astell&Kern AK240 contains within its milled-from-solid casework dual Cirrus Logic CS4398 DAC chips, 256GB of internal memory, a microSD slot, separate single-ended and true balanced headphone jacks—and the company's trademark knurled volume knob. With the company's MQS app, the AK240 user can stream, from any Windows or OS computer, PCM files up to 24-bit/192kHz, plus single- and double-rate DSD files. The AK240 can also be enjoyed as a USB DAC, or used as a wired or wireless source component for one's home system. And we haven't even mentioned the vegetable tanning of its Italian-leather case. The AK240 presented ML with performance "at once resolute and finely detailed," though he noted that he's heard richer, riper sound from other products. "The slight thinness I'd heard through the 'phones became more evident through my main system, making less-than-stellar recordings sound a bit rough around the edges. On the other hand, great-sounding recordings, such as Santana's *Abraxas* in DSD, were given their due by the AK240." Subsequent to ML's review, JA measured the AK240 and declared, "Astell&Kern's AK240 gets a clean bill of health—and I shared ML's enthusiasm for its sound. While the AK240 is expensive, high-resolution sound on the go doesn't get any better. I'm sending the review sample back to iriver before I'm tempted to buy it!" (Vol.37 No.11 WWW)

AUDIO RESEARCH CD9: \$13,000

The CD9 is a top-loading, remote-controlled, tubed CD player with optional on-the-fly upsampling, two digital construction filters, and a full set of digital inputs and outputs. Four 6H30 dual-triode tubes drive the analog section; a fifth 6H30 and a 6550C regulate the power supply. The CD9 uses four digital-to-analog converters (two per channel, each in dual-mono mode) and handles resolutions up to 24 bits and sample rates up to 192kHz. Though just as open, detailed, and emotionally compelling as the similarly priced Krell CIPHER, the CD9 traded the solid-state player's better-defined transient attacks for body and harmonic bloom, said FK. "The CD9 is a superb machine for spinning CDs and streaming hi-res downloads, a superb source for today and tomorrow," he concluded. (Vol.36 No.10 WWW)

AURALIC ARIES NETWORK BRIDGE: \$1599

The Auralic Aries network player, which supports the UPnP and OpenHome standards, has inputs for WiFi and Ethernet, plus a recently implemented input for a USB Network-Attached Storage (NAS) device. The Aries user must supply his or her own network router and DAC (digital outputs on the Aries include USB, TosLink, coaxial S/PDIF, and AES/EBU), and must also download the Auralic Lightning DS app—at present available only for the iPad, though Android support is said to be coming. Those requirements fulfilled, the Aries, whose curvaceous body conceals an internal WiFi antenna, can wirelessly stream up to double-DSD, and supports lossless streaming from the services Qobuz and WiMP/Tidal. As ML wrote, "The Aries presented a seemingly lower noise floor than my MacBook Pro. There was a sense of greater resolution, and an increase in dynamic snap similar to what I'd heard with the [Simaudio] MIND." (Vol.38 No.1 WWW)

AYRE ACOUSTICS CX-7E^{MP}: \$3950 ★

In his measurements, JA concluded that the original CX-7 CD player was "a model of modern CD-playing design.... [It] sounds as clean as it looks. Its balance is vibrant, its bass well-defined and deep, its highs clean, detailed, and well-resolved." He was impressed by the way the original CX-7 preserved the "fragile sense of an acoustic around recorded instruments.... Nothing sounded confused or obscured via the CX-7." While appearing physically un-

changed, the CX-7e has undergone several upgrades, including a new FPGA chip. Sounding "superbly rich, smooth, and detailed," with "velvety highs and an enormously deep bass," the CX-7e "fully deserves a Class A rating in *Stereophile's* 'Recommended Components,'" decreed JA after auditioning an early version of the "E" revision. The improved Ayre offered a more vivid and tactile presentation, distinguishing itself as "an almost aggressively rhythmic player, yet one with a wide open and transparent view of the sound," said AD. "Taut and tuneful, much better than original CX-7," adds WP. RD's new reference for high-end CD players. Further testing showed that the CX-7e exhibited excellent measured performance, though its noise floor wasn't as low as that of the C-5xe. WP preferred the rhythmic drive and huge soundstage of Ayre's C-5xe universal player. Now supplied with MP upgrade—upgrading a CX-7e to MP status costs \$250–\$900, depending on the age of the unit, and includes a reconfigured DAC, upgraded wiring, and new operating-system firmware for faster track access. The CX-7e^{MP} produced a more natural onset and decay of transients with better-defined air around instruments, resulting in a sound that was "more like live music and less like a recording," said RD. Compared to the Luxman D-05, the Ayre was more articulate and focused but lacked the Luxman's full, rich midrange, said JM. (Vol.26 No.5, Vol.27 No.12, Vol.29 No.2, Vol.31 No.1, Vol.32 Nos.2 & 10; Vol.35 No.4, Vol.38 No.2 WWW; see also "The Fifth Element" in Vol.34 No.2 and Vol.35 No.4 WWW)

BAETIS XR3 MEDIA SERVER: \$7995

In a world of high-end media servers that support only two-channel playback, the multichannel Baetis XR2—described by KR as "a complete hardware-and-software package to which the user need add nothing but more storage"—stands out. Essentially a fourth-generation IntelCore i7 computer, the cooling system of which has been optimized for silent operation, the XR2 runs Windows 7 and uses JRiver Media Center playback software. During setup, an icon on the computer's desktop allows a Baetis technician to "see" and control the XR2 while speaking on the phone with the user; thus KR was up and running in no time: "After boot-up, I loaded JRiver's Media Center 19, clicked on a music file, and was able to play via S/PDIF immediately." KR put his multichannel aspirations on temporary hold, compared the S/PDIF output with that of other players and servers, and concluded that the XR2 "produced the best two-channel sound from every DAC I tried" at every level of resolution, including DSD-over-PCM. Turning to multichannel playback via the Baetis's USB and HDMI outputs, KR was equally impressed, observing that his go-to multichannel disc "had never, ever sounded better. Every instrument was right in the room, and well defined from left to right and from front to back. Luscious." KR's experience of the current XR3 version continues the recommendation. (Vol.37 No.9, Vol.38 No.9 WWW)

DIGIBIT ARIA MEDIA SERVER:

\$6995 AS REVIEWED

With their beautifully styled Aria, server specialists DigiBit have entered the hardware market with a prepackaged, dedicated music server that can play multichannel files. The Aria runs a heavily customized version of JRiver, and is available with or without an internal DAC, and with or without on-board 4TB or 2TB file storage, the latter as either solid-state or a hard disk; KR skipped the DAC, owing to its two-channel limitations, but opted for the 2TB hard drive. With the Aria's S/PDIF output connected to his exaSound e28 DAC and with Aria's app downloaded to his iPad, KR was up and running in 10 minutes. Oddly, the Aria's manual makes no mention of multichannel, but, as KR points out, "the Aria handles multichannel files with the same facility as it does two-channel. The only difference is that you need to ask DigiBit to install the appropriate ASIO driver for your device." Even so equipped, the Aria's built-in ripper did not do multichannel; apart from that, as KR wrote, the Aria was "a delight to use and makes no compromise in sound quality. Fundamentally, the Aria's sound was as satisfying as that of other high-quality, computer-based servers." (Vol.38 No.3 WWW)

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METRONOME TECHNOLOGIE CD8T SIGNATURE: \$11,800

Made in France, the exquisitely built CD8T Signature CD player measures 17.5" W by 4.5" H by 17" D and, thanks in part to its three toroidal transformers, weighs 33 lbs. It uses a top-loading Philips CDM12 transport mechanism and a single 6922 tube, and has a 24-bit/192kHz-capable asynchronous USB input, an S/PDIF output, and balanced and single-ended stereo outputs. It produced coherent, compelling overall sound with superb low-level resolution, an excellent sense of space, and an absence of anything digital, said ST. "The Metronome Technologie CD8T is more than an exceptional work of engineering; it is an expression and triumph of art," he concluded. (Vol.36 No.11)

MSB UNIVERSAL MEDIA TRANSPORT V: \$6995

Based on the Oppo BDP-103 Universal Network 3D Blu-ray player—"a great place to start, and a player I'd already had in my video system for a year," said JI—the Universal Media Transport plays CDs, DVDs, BDs, and SACDs, as well as most popular music-file codecs (it has a USB Type A jack for memory sticks). The UMT retains Oppo's onboard video circuitry but uses MSB's own audio processing. Its use requires one of four MSB power-supply options, ranging in price from \$595 to \$5995. While reviewing MSB's Analog DAC (see Digital Processors), JI achieved good results with the UMT: "When I added [it] to the mix, [the system's sense of] 'thereness' notched up a nanotad." (Vol.37 No.4 WWW)

OPPO BDP-105D: \$1299**OPPO BDP-103: \$499 \$\$\$**

Oppo's latest universal disc players offer a host of versatile and powerful features. The BDP-103 has two HDMI inputs; two HDMI outputs; a DLNA-compatible Ethernet port; three USB ports to handle hi-res audio, video, and picture files; and an RJ-45 jack to access the Internet for audio and video streaming. It offers bass management, channel-balance and -delay settings, and remote control of input selection and volume. In a larger, heavier chassis, the BDP-105 adds three digital inputs (asynchronous USB-B and S/PDIF on coax and TosLink) and has two eight-channel Sabre32 ES9018 DAC chips—one for its 7.1-channel RCA output, the other for its dedicated two-channel outputs on RCA and XLR jacks. Compared with the '103, the '105 sounded cleaner, smoother, and more detailed, regardless of source or number of channels, said KR. Though the '103 was "no slouch," Kal was more impressed by the more versatile '105. "I know of no other high-quality player with such a comprehensive feature set," he said, deciding that Class B was appropriate for the '103. A free firmware upgrade provides multichannel DSD capability and supports exFAT drives, but doesn't currently offer gapless playback of DSD files. KR was thrilled: "The electricity and communication I experienced were unprecedented." (Vol.36 Nos.5 & 7 WWW)

PARASOUND HALO CD 1: \$4495

Inside Parasound's first Halo-series CD player are a computer optical-disc drive, an R-core transformer, an analog power supply, and an Intel single-board computer running Linux and DSP software from Holm Acoustics of Denmark. Internal partitions of thick aluminum isolate the disc drive from the power supply and computer circuitry. The CD 1 spins CDs at four times the usual speed and plays digital data from solid-state memory; every bit is read at least twice, and the reads must match, before being sent on to a memory buffer. Compared to Musical Fidelity's MJCOT transport, the Halo CD 1 was significantly quieter and produced a larger, more spacious sound, said JM. "Class A," he concluded. ST praised the CD 1's sweet, nonfatiguing smoothness. "This is the way to do computer audio," he said. Compared to the NAD M51 D/A processor, the Parasound added a touch more midbass and lacked a slight amount of recorded ambience, said JA. On the test bench, the Halo CD 1 exhibited excellent measured performance, highlighted by the best error correction JA had ever encountered in a CD player. Incompatible with pre-emphasized CD-Rs, but as those are extraordinarily rare, this is not a real-world limitation. (Vol.36 Nos. 6, 7, & 12; Vol.37 No.1 WWW)

PONOPLAYER: \$399 \$\$\$

Conceived by Neil Young, designed by Charles Hansen and Ayre Acoustics, and made possible by Kickstarter funding of \$6.2 million—which is \$6.2 million more than has been raised by anyone offering to create a digital player of no greater resolution than the Compact Disc—the Toblerone-shaped and unambiguously yellow PonoPlayer has an internal storage capacity of 64GB (bump-up-able to 128GB with the insertion of a microSD card); runs up to 8 hours on a single charge; supports sample rates and word lengths of 192kHz and 24 bits, respectively; incorporates separate 3.5mm output jacks for line out and headphones; and accepts all popular file formats (early pre-release reports suggested that Pono would create their own codec, but that has not come to pass). Files can be downloaded direct from PonoMusic or can be loaded using the company's JRiver-developed desktop application. JA noted that "CD rips sounded excellent through the player," but went on to say that "it was with hi-res recordings that the PonoPlayer shone brightest." Used as a portable, the Pono "[had] the edge in sound quality" over JA's Astell&Kern AK100, sounding sweeter and warmer; and when he used the Pono to drive his big rig at home, JA said, "I didn't feel I had missed much of the music." The PonoPlayer also measured "very well," irrespective of its affordable price. In a Follow-Up, JA wrote of his experiences using a \$70 Surf Cables adapter that allows the PonoPlayer's headphone output to be auditioned in balanced mode. His measurements uncovered a drop in the output signal's noise floor when so configured, and JA reported being "impressed by the increased 'drive' of the balanced playback." He concluded: "the word to describe the sound of this \$399 player in balanced mode: *transcendent*." Class A rating refers to the sound in balanced mode, otherwise high Class B applies. Writing about the pairing of his own PonoPlayer with a pair of ADAM Audio A3x active speakers, ML wrote: "We're talking highly engaging music reproduction." (Vol.38 Nos. 4, 6, 9 WWW)

PRIMARE CD32: \$2850

Primare's CD32 is a single-box CD player featuring balanced and single-ended analog outputs, a choice of three digital outputs (S/PDIF, TosLink, AES/EBU), and a USB Type A digital input, intended for thumb drives, via which the user can play MP3 files (but nothing else). The remote handset allows the user to select among three pre-conversion upsampling modes: the original 16-bit/44.1kHz signal, or the same datastream upsampled to 48 or 96kHz. BD praised the CD32 for allowing instruments to sound like their real selves, with "violins [sounding] articulate and especially captivating." The Primare's spatial performance was also impressive, as was how it conveyed the relationship between the recording space and the instruments within. "The CD32 allowed... guitars to pressurize the space around them in just the way an acoustic guitar—even an amplified one—will in concert." Compared with its predecessor, Primare's CD31, BD wrote that "the CD32 improved on all the areas where the CD31 was strong, and addressed the areas where it wasn't." JA's measurements gave the Primare a clean bill of health, noting in particular the player's "superb error correction." (Vol.37 No.6 WWW)

RESOLUTION AUDIO CANTATA MUSIC CENTER:**\$6495 ★**

With its large, retro-modern alphanumeric display and top panel of scalloped aluminum waves, the gorgeous Cantata has one of the most distinct appearances in all of digital audio. It combines a digital preamp, CD player, and DAC in a single slim chassis and offers Ethernet, USB, TosLink, AES/EBU, and coax inputs, as well as balanced and unbalanced stereo outputs. A free app allows the user to control all functions via iPad, iPhone, or iPod Touch, and the optional Pont Neuf USB-to-Ethernet Bridge (\$400) permits wireless streaming of resolutions up to 24-bit/96kHz. Compared to the Benchmark DAC1 USB, the Cantata offered equal clarity but sounded noticeably smoother and more natural, said JI. On the test bench, the Cantata lacked low-level linearity but exhibited superb rejection of jitter and error correction, said JA. (Vol.34 No.11 WWW)

SIMAUDIO MOON EVOLUTION 650D: \$9000 ★

The beautifully built 650D is a single-box CD player and DAC with AES/EBU, S/PDIF, TosLink, and USB digital inputs; S/PDIF and AES/EBU digital outputs; and balanced and unbalanced analog outputs. It uses ESS Technology's Sabre² Ultra DAC chip and employs individual toroidal transformers for the digital and analog power supplies. The Simaudio had a muscular, rhythmically solid sound with clean, fast transient articulation, excellent transparency, outstanding soundstage depth and width, and analog-like imaging, said MF. JA was impressed by the Sim's superb measured performance: "It's hard to see how it could be any better!" It took three years, but an answer finally came, when MF reviewed the Simaudio Moon Evolution 820S power supply (\$8000). Although the 820S can simultaneously power two Moon Evolution components—other candidates include Simaudio's 750D DAC, 740P preamplifier, and 610LP and 810LP phono preamplifiers—MF tried the review sample on the 650D. He found that, "in general, adding the 820S tightened the bottom end and removed smear and edge from the top, while improving high-frequency extension and the sense of air around instruments. Instrumental three-dimensionality improved, and microdynamics were particularly enhanced, probably as a result of the far lower noise floor." MF's conclusion? "My advice to owners of Simaudio's Moon Evolution 650D: Go to your dealer and get an 820S to take home and try. Put it on a credit card if the dealer doesn't trust you, but be prepared to drop \$8000—I don't think you'll be returning that 820S to the store." (Vol.34 No.11, Vol.37 No.11 WWW)

SIMAUDIO MOON MIND NETWORK PLAYER:**\$990 \$\$\$**

Simaudio's Moon intelligent Network Device (MiND) is a network player for use in systems that already have a D/A converter and a Network Attached Storage (NAS) device—neither of which the MiND includes. Its use also requires a WiFi-compatible network router and, to run Simaudio's MiND app, an iPhone or iPad. The MiND itself, which is UPnP- and DLNA-compatible, offers WiFi and Ethernet inputs, and its all-digital outputs (AES/EBU, coaxial S/PDIF, and TosLink) support datastreams up to 24-bit/192kHz. Virtually all music-file codecs are supported, as is streaming from vTuner Radio. With the MiND connected to his home router via Ethernet cable (and to his Auratic Vega DAC via AES/EBU), ML was impressed: "Compared to my stock MacBook Pro running Pure Music 2 or Audirvana, the MiND appeared to offer a lower noise floor. There was a newfound purity to the sound of my NAS-based music that made possible a more musically engaging experience." The drawback: "When I tried the MiND's WiFi connection, I found that I could play without problem files of resolutions up to 24/88.2, but higher resolutions had frequent dropouts." (Vol.38 No.1 WWW)

SONY HAP-ZIES MEDIA PLAYER: \$1999.99

One might not guess from its 16.75"-wide, 32-lb chassis that the Sony HAP-ZIES is, essentially, a very high-quality iPod—albeit one that, in KR's words, "improves on Apple's paradigm in every way but portability." Not intended for use as a D/A converter—it has no digital inputs—the HAP-ZIES combines a 1TB hard drive with a processor that can "remaster" any file to DSD128; a Digital Sound Enhancement Engine (DSEE) claimed to improve the sound of compressed files; wired and wireless Ethernet connectivity for Internet radio streaming from one's computer; and the ability to play almost any two-channel music-file format, lossless or lossy, including DSD. The DSEE feature is automatically disabled for DSD files—smartly presumed uncompressed—while the DSD "remastering" can be disabled, if not conveniently. KR was unimpressed with its remote handset, preferring by far the control app available for Android and iOS, but was very pleased with the Sony's sound: "An integrated, single-box [file] player of the highest sonic quality," JA praised the HAP-ZIES's "impressive measured performance." (Vol.37 No.5 WWW)

B**LA ROSITA ALPHA: \$2995**

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DIGITAL PROCESSORS

SACD, DVD-A, & CD PLAYERS & TRANSPORTS & MEDIA PLAYERS

then was that you couldn't have it until 2014." Thus spoke ST as he endorsed the idea behind the French-made Alpha New streamer, use of which encourages listeners to rip their CDs to iTunes—to take advantage of its leisurely and thorough error correction—rather than play them in real time. The Alpha New contains its own 16-bit/44.1kHz DAC but does not accept S/PDIF data from a CD player; rather, it accepts datastreams via AirPlay or its Ethernet input. Manufacturer La Rosita does not believe that any hi-res file can outperform 16/44.1 digital, and though the Alpha New can play any format or download, in doing so it will truncate rather than downsample the data. Apple MacBook owner ST observed that "inserting the Alpha New into my system was a snap rather than a snafu," and he set to enjoying, via the Alpha New, his favorite Internet radio streams. "I was astonished by the quality of the sound," he said. "I heard drums sound live: impactful, with no smearing of cymbals. La Rosita's Alpha New made Radio Swiss Jazz sound like analog LPs." (Vol.37 No.11)

MUSICAL FIDELITY MICDT TRANSPORT: \$999

Made to match the MISDAC, with which it shares a remote control, the MICDT transport measures just 8.6" W by 3.9" H by 11.7" D, has a slot-loading transport mechanism, and offers S/PDIF, AES/EBU, and TosLink outputs. Partnered with the MISDAC, the MICDT had a rich, full-bodied, spacious sound that was easy to listen to and enjoy, said ST. Compared to the more expensive Parasound Halo CD 1, however, the MICDT sounded looser, less controlled, and less relaxed. (Vol.36 No.10)

SONY NW-ZX2: \$1199.99

Billed by Sony as a High-Resolution Walkman, the iPhone-sized NW-ZX2 plays PCM files up to 24-bit/192kHz and DSD up to 5.6MHz. Its onboard DSP capabilities include Sony's Digital Sound Enhancement Engine for bumping up lo-res files to "near high-resolution sound quality"; WiFi and Bluetooth capabilities are built-in. The NW-ZX2 has 128GB of onboard storage, plus a 128GB-capable microSD slot for those who think more. ML enjoyed the player's "clean, incisive, lively sound," and while he found the Pono PonoPlayer had a comparatively "meaty and more colorful sound," he praised the NW-ZX2's overall clarity and ability to retrieve subtle details. He also noted the Sony's claimed ability to run 33 hours on a single charge of its lithium-ion battery, and its larger-than-average, pleasant-to-use touchscreen. (Vol.38 No.5 WWW)

C**MUSIC HALL C-DAC15.3: \$549**

The Music Hall c-dac 15.3 is considerably more than its model name suggests: It is indeed a digital-to-analog converter, with three inputs—USB, TosLink, coaxial—and 24-bit/192kHz performance, the latter thanks to its tried-and-true Burr-Brown PCM1796 DAC chip. Yet it's also a CD player, thanks to the inclusion of a Sanyo HD850 disc transport that Music Hall claims is mounted "mid-ship": nautical but nice! Like Music Hall's a15.3 integrated amplifier, the Chinese-made c-dac is supplied in black casework with a full-width (16.9") faceplate of brushed aluminum. Used by SM with the a15.3 amp, the c-dac 15.3 "brought [the] music forward and enveloped me in brilliant sound," with extended highs and snappy transients, if less smoothness and body than the NAD C 515BEE CD player. (Vol.37 No.6 WWW)

NAD C 515BEE: \$299

NAD's entry-level CD player replaces their C 515BEE, which had been SM's reference. The new model uses a different transport mechanism, a more powerful digital signal processor, a revised microprocessor, new firmware, a revised power supply for lower power consumption in Standby mode, and an automatic standby feature that puts the player to sleep when not in use. Though the new model retains the old model's size (17" W by 2.75" H by 9.5" D), the front panel has been subtly updated with a thinner disc drawer, larger display, and slightly smaller, rounder buttons. SM found that the new model's disc drawer opened and closed slightly more smoothly, quietly, and slowly. Sonically, the two players were virtually identical, though the new model may have been "slightly more extended on top, slightly more effervescent and polished

overall," said SM. "For the money, I don't think you'll find a better CD player," he concluded. (Vol.36 No.10 WWW)

SONY PLAYSTATION 1:**AROUND \$25 USED \$\$\$ ★**

A first-generation Sony PlayStation (SCPH-1001) is made of gray plastic, has a set of RCA analog outputs, and comes equipped with a game controller and power cord. When used with Cardas Neutral Reference interconnects, the PS1 offered an "extended, open, and agile" sound, said AD who declared the PS1 an "insanely high value." JM was unimpressed by the player's user interface and noisy disc mechanism, however, and found that switching to cheaper cables resulted in a threadbare midrange and treble. Nevertheless, he admitted, "For \$25, it sounds wonderful." AD agreed, noting that the PS1 combined "slightly diminished" frequency extremes with a "superior level of rhythmic acuity" for a smooth and involving sound. Prices have climbed to as much as \$70 on online commerce sites such as eBay and Audiogon. Some disagreement among the magazine's scribes: Low Class B, according to AD; Class D, according to JM; JA splits the difference, but warns that later-generation PS1s use a less well-specified DAC and lack the RCA output jacks: ignore them, he says. Compared with the Emotiva ERC-2, the Sony lacked treble clarity and bass weight, but offered a fleshier midrange and was more forgiving of poorly recorded material, said SM. (Vol.31 Nos.4 & 7, Vol.35 No.1 WWW)

D**TASCAM CD-200: \$599.99**

Built around the new audio-specific CD-5020A CD transport from TEAC, TASCAM's parent company, the rack-mountable CD-200 offers both single-ended analog outputs and coaxial and optical digital outputs. Features include a front-mounted ¼" headphone jack and, for the player's analog outputs, a pitch control with a range of f112% (its zero point is securely detented). The CD-200 can also play disc-encoded MP3 and WAV files, and its asking price includes a remote handset. JM noted that the CD-200, used as either a transport or a one-box CD player, performed flawlessly, and added that the TASCAM was "the quietest affordable CD player I've ever used." Although its sonic performance was handily bettered by the "read-until-right" Parasound Halo CD 1, JM found "nothing at all to complain about" in the TASCAM—which, he hastens to advise, is "widely discounted." (Vol.37 No.8 WWW)

DELETIONS

dCS Scarlatti and Parasound Zcd discontinued; Baetis XR2 media server, Bryston BDP-1, replaced by new versions; Playback Designs MPS-5 Reference not auditioned in a long time.

DIGITAL PROCESSORS

Editor's Note: The sound of any particular CD transport/digital processor combination will be dependent on the datalink used—see "Bits is Bits?" by Christopher Dunn and Malcolm Omar Hawksford, *Stereophile*, March 1996, Vol. 19 No.3 (WWW). Unless mentioned, processors are limited to 32/44.1/48kHz sample rates. To be included in Class A+, a digital processor must be capable of handling DSD or 24/96 LPCM data.

We strongly recommend those interested in using a computer as a true high-end digital audio source visit our sister website www.AudioStream.com, which is edited by Michael Lavorgna.

A+**ANTELOPE AUDIO ZODIAC PLATINUM: \$5500**

From the makers of the Class A-rated Zodiac Gold comes the Zodiac Platinum, which bundles a D/A processor, headphone amp, and preamp into a small but chunky (6.5" W by 4.4" H by 7.6" D) enclosure. (The similarly chunky Voltikus power supply is slightly less wide.) Like the Gold, the Zodiac Platinum offers PCM performance

through 384kHz, but adds DSD64 and 128 via USB (DoP), which it upsamples to DSD256, Antelope Audio claiming direct DSD-to-analog conversion. Technical highlights include FPGA processing for some functions and "Oven-Controlled Clocking," in which jitter is kept low through thermal stabilization of the word clock's crystal oscillator. User controls appear on both the front panel and the remote handset, the former distinguished by a hefty, nice-feeling volume knob—although JI noted that it "produced a bit of a raggedy zipper sound" through his system when he adjusted the volume. With some musical selections JI noted the Platinum's "slightly thicker bottom end" compared with another premium processor, and with other tracks a thicker sound overall, adding that "both [processors] excelled at creating a transparent path to my power amps." As for the Zodiac's headphone amp, "I'd never heard better sound from my Grado HP1s," JI declared. JA wrapped up: "Overall, the very good measurements of Antelope Audio's Zodiac Platinum indicate excellent digital and analog engineering." (Vol.37 Nos.9 & 10 WWW)

AURALIC VEGA: \$3499

The elegant-looking Vega D/A processor is housed in a slim, brushed-aluminum enclosure and has a front panel dominated by a wide, rectangular, yellow-on-black OLED display. The rear panel offers single-ended and balanced outputs, and five digital inputs: transformer-coupled AES/EBU on an XLR, two transformer-coupled coaxial S/PDIFs on RCAs, one optical S/PDIF on TosLink, and a high-speed USB2.0 port. The AES/EBU and S/PDIF inputs handle 16- and 24-bit data with sample rates up to 192kHz; the USB port also operates with sample rates of 352.8 and 384kHz, and will accept DSD64 and DSD128 data. A Sanctuary audio processor upsamples PCM input data to approximately 1.5MHz and 32-bit depth, and implements four reconstruction filters for PCM data and two choices of low-pass filter for DSD data. Though it required several hours from cold before sounding its best, the Vega combined outstanding low-end weight and high-frequency extension with an exceptional sense of space, said JA, who also noted measured performance that was beyond reproach. "It's DSD and digital done right!" he exclaimed. (Vol.37 No.2 WWW)

AYRE ACOUSTICS QA-9: \$4750

Housed in the same compact chassis as Ayre's QB-9 USB DAC, the QA-9 is a solid-state A/D converter intended to allow audiophiles to make high-quality rips of their LPs. It uses an Arda Laboratories AT1201 two-channel A/D converter chip and operates at sample rates up to 192kHz, outputting 24-bit data via either a USB 2.0 or AES/EBU connection. Setup was simple and, aside from the tedious task of eliminating LP surface noise, use was straightforward. The Ayre offered smooth highs, a clean midrange, and an excellent sense of space. JA summed up: "When recordings you love have never been issued on a good-sounding CD, it makes sense to rip them with Ayre's QA-9—it's the closest thing to a truly transparent audio component I have encountered." He bought the review sample. Now includes DSD and Word Clock outputs on transformer-coupled BNC jacks and outputs DSD via USB. (Vol.35 No.11, Vol.36 No.4 WWW)

AYRE ACOUSTICS QB-9 DSD: \$3450 ★

The QB-9 is an asynchronous transfer mode, USB-input DAC with Ayre's minimum-phase digital reconstruction filter implemented in Field-Programmable Gate Array. It uses a Texas Instruments TAS1020B chip, supporting sample rates up to 96kHz and word lengths up to 24 bits. High-resolution digital files "popped with life" and were marked by a natural flow and physical impact that allowed WP to form a deeper emotional connection with the music. JA: "Ayre's QB-9 is well engineered, offering excellent performance in both the analog and digital domains, and is not compromised by its having just a USB data input." JI felt the QB-9 exceeded the YBA WD202 and Benchmark DAC1 USB in terms of spatial detail, depth, and width, while adding a touch of seductive clarity. "Wow!" The latest version of the QB-9 uses an XMOS XS-1 microprocessor chip and supports sampling rates via USB2.0 up to 192kHz. Earlier QB-9s can be upgraded for \$250. Compared with the Resolution Audio Cantata, the Ayre tended



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to exaggerate sibilants on some recordings but provided a warmer, fleshier midrange, felt JI. Compared to the NAD M51, the Ayre had slightly greater punch and better dynamic edges. Compared to the much more expensive MSB Diamond DAC IV, the QB-9 had a very slightly more aggressive midrange, but otherwise held its own, said JI. Current production as of mid-2013, auditioned by AD in connection with his AX-5 review in Vol.36 No.7, uses an ESS Sabre DAC chip, offers improvements to the USB chip power supply, and will decode DSD data. *Stereophile's* "Joint Digital Source" and "Overall Component" of 2009. (Vol.32 No.10, Vol.33 No.6, Vol.34 Nos.7 & 11, Vol.35 Nos.7 & 10 WWW)

BENCHMARK MEDIA SYSTEMS DAC2 HGC:

\$1995 \$\$\$

Although similar in appearance to previous Benchmark models, with a front-panel volume control and two 1/4" headphone jacks, the new DAC2 HGC uses four 32-bit ESS Sabre DACs, run in balanced configuration, for a significantly lower noise floor; has a new Hybrid Gain Control (HGC) for volume attenuation, which combines active analog gain control and passive low-impedance attenuators in the analog realm with a 32-bit digital DSP gain control for digital signals; and provides front-panel displays for both sample rate and word length. Though it lacks a balanced AES/EBU input, the DAC2 HGC offers two analog inputs and five digital inputs: two optical, two RCA coaxial, and one asynchronous USB that handles resolutions up to 192kHz as well as DSD64. It had a pleasantly forward sound, with smooth highs, a solid bottom end, and excellent image separation, said EL. Compared to the Auralic Vega, the Benchmark had a similarly smooth top end, but lacked the Vega's sweet midrange and outstanding portrayal of space, said JA. JI noted the DAC2's good scale and sense of ambient space, but found it lacked focus compared to the considerably more expensive MSB Analog DAC. (Vol.37 No.2 WWW)

BRICASTI DESIGN M1 DAC: \$8595 ★

With first-class fit'n'finish and uncluttered exterior design, the dual-mono M1 DAC measures a rack-friendly 17" W by 2" H by 12" D and weighs 12 lbs. It offers four digital inputs (S/PDIF, AES/EBU, BNC, optical), accepts sampling rates up to 192kHz, and, as of 2013, adds a USB input, volume control, remote control, and DSD decoding. The Bricasti's fast, detailed, powerful sound made the much less expensive Musical Fidelity M1DAC seem veiled, muffled, and slow, said JM. "The best digital playback I have heard," he concluded. Compared with the Weiss DAC202, the Bricasti was less forgiving of poorly recorded material, but had bigger, deeper, better-defined low frequencies; compared with the dCS Debussy, the Bricasti sounded very slightly warmer and was very slightly more transparent, said JA, who also praised the M1's state-of-the-art measured behavior. A firmware update (free to registered owners) adds minimum-phase digital filter options, digital phase inversion, and a digital volume control. Compared to its previous filter set, the Bricasti's minimum-phase sound was much richer, with more body, more coherence, and less grain, said JM. Used as a line source in place of Parasound's Halo JC 2 preamp, the Bricasti produced a more coherent sound, with deeper, tighter, more powerful bass. "My personal best just got better," JM concluded. Now ships with asynchronous USB input (not yet auditioned), and will decode DSD data. Production in 2013 replaces the switch-mode power supply of the M1's digital-routing section with a linear supply based on a custom-wound transformer. With the new power supply in place, JM heard improved bass extension and greater overall clarity. Owners of original M1s (made prior to March 2013) can have their units updated for \$200. In 2014, Bricasti offered to M1 owners even more additional refinements: a remote-control kit, involving a separate infrared receiver that plugs into the rear panel (\$500 for M1s presently in service; included in the price of new units); a changeover, performed at the factory, from multiple glass-and-wire fuses to a master circuit breaker (\$150); and an upgrade, also done at the factory, to DXD and DSD64/DSD128 capabilities (\$400). As impressed as he was by the last, JM remained philosophical: "the

fact that Bricasti's M1 can now play DSD and DXD files is less important than the fact that its playback of plain old 'Red Book' 16-bit/44.1kHz audio is so compelling that I, for one, don't feel shortchanged when a good recording is not "high-resolution." He observed that, yet again, his personal best in digital playback just got better. (Vol.34 No.8; Vol.35 Nos. 2, 3 & 9; Vol.36 No.7; Vol.37 No.12 WWW)

dCS DEBUSSY: \$11,499 ★

The slim, sleek Debussy D/A processor has a digital volume control, offers a full range of digital inputs including a true asynchronous USB port, and uses the latest version of dCS's Ring DAC. The USB input was upgraded in the summer of 2011 to handle 176.4 and 192kHz data and in the summer of 2012 to handle DSD data. Though it lacked the sophistication of dCS's more expensive Scarlatti system, the Debussy had a fast and delicate sound, with powerful bass, dramatically solid, three-dimensional images, sensational rhythmic drive, and outstanding dynamics, said MF: "A very easy and enthusiastic recommendation." JA agreed: "It was a pleasure to test such a superbly engineered product." Compared with the Weiss DAC202, the Debussy offered greater resolution, transient snap, and low-bass weight, but lacked midrange warmth and overall body, said EL. Compared with the Bricasti M1, the Debussy was slightly less transparent, said JA; compared to the Classé CP-800, the Debussy offered more ambience and propulsive drive but lacked some lower-midrange energy. Compared to the MSB Diamond DAC IV, the Debussy sounded refined and very polite but lacked image precision and spatial depth, said JI. (Vol.34 Nos.1 & 12; Vol.35 Nos.2, 9, & 10 WWW)

EXASOUND E28 MULTICHANNEL DAC: \$3299

See "Music Surround-Sound Components" (Vol.36 No.11 WWW)

GRACE M905: \$3495

From the pro-audio world comes the Grace Designs m905 Monitor Controller: a combination line stage, D/A converter, and headphone amplifier designed as a control center for music playback in a recording studio. As befits its provenance, the m905 is rack-mountable, with most of its controls built into an umbilical-connected, iPad Mini-sized remote that, according to JM, exuded an "Authentic German Engineering" level of quality, even though Grace Designs is based in Colorado. The m905 is built around the Burr-Brown PCM1798 DAC chip, plus an XMOS USB receiver, and it offers, via the DoP standard, DSD streaming: the first product from Grace Designs to do so. Already a fan of the "ever-so-slightly euphonic" Grace m903—which was *Stereophile's* Headphone Product of the Year for 2012—JM was "taken aback at how much better the m905 sounded," and quantified the depth of his delight at the new model's DSD capabilities with two words: "Woobier Joobers!" He said that, all in all, the m905 is "among the most impressive pieces of audio gear" he has ever evaluated. (Vol.37 No.4 WWW)

LUXMAN DA-06: \$4990

Among the earliest and most notable products to emerge from the burgeoning world of DSD streaming, the Luxman DA-06 is a full-size D/A processor built around a Burr-Brown PCM 1792A 32-bit converter chip. The DA-06 supports 2.8224 and 5.6448MHz DSD files and, via its USB input, PCM files up to 32-bit/384kHz. Front-panel controls include the ability to select among three different PCM filters and between two sets of DSD rolloff characteristics, as well as to invert absolute signal polarity on the fly. AD, who acknowledges "DSD's prowess at communicating the subtleties of musical flow," observed that the Luxman sounded "generously explicit, [with] musical and sonic details in abundance and . . . a soundfield notable for its openness and general lack of murk. Still, the DA-06 had good substance, with a tonal character that was slightly—almost imperceptibly—warm and round." In his measurements, JA noted that the Luxman's low levels of harmonic and intermodulation distortion are offset somewhat by marginally poorer-than-expected jitter and noise-floor numbers—yet he declared that, overall, "the DA-06's measured performance is simply superb." AD's conclusion: "a damn fine-sounding D/A converter with virtually all music." (Vol.37 No.7 WWW)

MSB DIAMOND DAC V: \$29,995 ★

The Diamond DAC V (called IV when reviewed) is a solid-state, remote-controlled D/A converter with a volume control, a top-panel iPod dock, and an auxiliary analog input. In addition to its balanced and single-ended outputs, the MSB provides a complete array of digital inputs: coaxial S/PDIF (RCA and BNC), TosLink, AES/EBU, MSB Network, and USB 2.0 digital inputs operating in isochronous asynchronous mode with 24-bit word length and sample rates from 44.1 to 384kHz. Options, as reviewed, include: FemtoSecond Galaxy Clock (now included as standard, \$4995 for retrofit to older Diamond DACs), Diamond Stepped Attenuator (\$2995), USB2.0 384kHz input (\$1395), and Diamond Power Base (\$5995). With its smooth and detailed midrange, pinpoint imaging, and superb spatial performance, the Diamond DAC IV produced "the best digital sound" JI had ever heard in his system. JA was similarly impressed by the MSB's measured performance. Current Diamond V version is *exactly* the same as the 2014 Select, which was \$75,000. Customers can upgrade from the older Diamond Plus series to the Diamond V series for \$6995. (Vol.35 No.10 WWW)

MSB ANALOG DAC: \$6995

The MSB Analog DAC combines a high-tech chassis machined from a solid billet of aluminum—it stands less than 1" tall yet weighs nearly 30 lbs!—with a circuit architecture that allows the buyer to select among five digital-input options, two power supply options, a WiFi option, and more—combinations of which can bring the price to just under \$12,000. (For \$6995, you get one digital input and the stock power supply.) The Analog DAC supports PCM and DSD up to 384kHz, employs a custom-designed, linear-phase apodizing digital filter, and offers single-ended and balanced analog outputs. JI was impressed with the MSB's "thereness," observing that, "With a DAC like the MSB, you get a sense of someone hitting Play on a big reel of wide-track analog tape, after being fed by live mikes in a room." Notwithstanding a couple of performance glitches, both solved by in-the-field firmware updates, JI found it difficult to part with his review sample: "It notched my system up to a place where almost all digital sources had an organic, natural presence without sacrificing the accuracy and detail present in the best recordings." JA noted that high-level signals produced some low-level distortion products, but otherwise found the MSB rare in being "so well thought out and so well engineered." Optional Volume Control: \$995. Optional Analog Power Base: \$2995. UMT Plus: \$5995. Optional Dual Signature Power Base: \$4995. (Vol.37 No.4 WWW)

NAD M51 DIRECT DIGITAL: \$1999 \$\$\$ ★

The M51 is an attractive, full-width D/A converter with a digital volume control and useful front-panel vacuum-fluorescent display that indicates input, volume status, and sampling rate. It offers AES/EBU, coaxial, optical, USB, and two HDMI inputs, as well as analog (one pair each single-ended and balanced) and digital (HDMI) outputs. While all of the NAD's inputs can handle PCM audio data of resolutions up to 24-bit/192kHz, the M51 converts everything it receives to a pulse-width-modulation (PWM) signal at a sampling rate of 844kHz, controlled by a clock running at 108MHz. The NAD had a "wonderfully detailed and revealing sound," said JI. JA noted measured performance that was "almost beyond reproach." Compared to the Auralic Vega, the NAD produced a cleaner, leaner, airier, less forgiving sound, said JA, though he still highly recommends the M51 as a great value for the price. Readers have reported—and JA has now confirmed—that the M51's earlier v.1.39 firmware offers a better, "fatter" sound than the later v.1.41, probably due to a 1dB higher output; later versions of the M51 can be easily "rolled back" to v.1.39. (Vol.35 No.7; Vol.37 Nos.2 & 5 WWW)

PS AUDIO PERFECTWAVE DIRECTSTREAM:

\$5999

Instead of an off-the-shelf chipset, PS Audio's first DSD processor uses original code written by hand into a field-programmable gate array (FPGA), the result being a system that converts all incoming data to double-rate DSD. In addition to asynchronous USB, digital inputs include RCA, TosLink, and HDMI, and both single-ended and bal-

anced analog outputs are provided. The DirectStream is built on a cast-alloy chassis, and has a glossy MDF top, as well as a touchscreen from which all user controls can be worked. (A remote handset is included.) Its firmware is user-updatable, as AD discovered while reviewing the DirectStream, during which time he noted its "excellent pacing, flow, correctness of pitch relationships, and the like, as well as a consistently smooth and slightly laid-back sound." With some files, AD found the DirectStream just a bit too laid-back—a condition mitigated in part by that firmware update—but found its musicality beyond reproach. JA observed that the DirectStream "measures superbly well" in many ways, but was troubled by its poor linearity at low frequencies and its "ultimate lack of resolution" with hi-rez files. But he admits that its sound quality is still very satisfying. In his Follow-Up, RD—who listens more to discs than to downloads—tried the DirectStream with PS Audio's PerfectWave Memory Player transport (\$3995), and observed, "listening to familiar recordings... I heard more musical detail from them than I previously had. This detail was not a matter of exaggerated treble, which can give an impression of increased detail, but was genuinely higher resolution manifested by greater differentiation among the sounds of instruments and rhythmic patterns." Subsequent to that audition, RD received and installed in the DirectStream a new firmware upgrade, bringing his unit to v1.2.1 status. His verdict: "The latest firmware represented a major improvement over the one that I and Art Dudley and Michael Lavorgna had. Soundstages were now deeper and wider, and well outside the speakers' positions with some recordings; and images on those stages were now more 'rounded,' more three-dimensional. The bass was cleaner, with better-defined transients." Following the firmware update to v1.2.1, JA re-tested the DirectStream and found evidence of a lower noise floor, increased low-level linearity, and a dramatic reduction in low-frequency distortion. Said JA: "Kudos to PS Audio for designing a product so that its performance can so easily be upgraded by its customers." Four months after the upgrade to v1.2.1, PS Audio updated the DirectStream's operating system to a version referred to as Pike's Peak—which, in RD's estimation, "seemed to transform the...sound: more dynamic, better bass, more extended treble, even better soundstaging." (Vol.37 No.9, Vol.38 Nos. 2, 3, 5, WWW)

WEISS DAC202: \$7287 ★

Made in Switzerland, the DAC202 is a digital-to-analog converter with an onboard volume control, a headphone amp, and a FireWire input. It offers AES/EBU, S/PDIF, and TosLink connections; uses an ESS9018 DAC chip; and can accept data resolutions up to 24-bit/192kHz. The Weiss had a smooth, delicate overall sound with a forgiving top octave, but lacked bass extension, jump factor, and involvement, said EL. Nevertheless, he concluded: "I think the Weiss DAC202 can easily offer Class A performance, especially for the audiophile who prizes its graceful, organic musicmaking." Compared with the Bricasti M1, the Weiss had a smoother overall sound but lacked bass definition, said JA. On the test bench, the Weiss proved the best-measuring D/A processor in JA's experience: "It just doesn't get any better than this!" DAC202U (\$8554, not auditioned) offers USB input. (Vol.35 Nos.1 & 2 WWW)

A

ABBINGDON MUSIC RESEARCH DP-777:

\$4995 \$\$\$ ★

Built into a large (17.7" W by 4.7" H by 14.6" D), well-braced, beautifully finished aluminum chassis, the tubed DP-777 is a versatile digital-to-analog processor that incorporates separate chips for handling high-resolution files and "Red Book" CDs. It offers the user choices of: five digital filters (two "Red Book," three hi-rez), six sampling rates, two jitter-reduction settings, sampling rates up to 192kHz, and word lengths up to 32 bits. There are five types of digital input jacks; two types of analog output jacks; and an optional volume control and analog inputs, to allow the DP-777 to be used as a conventional preamplifier. A Russian 6H1P dual-triode is used as an S/PDIF input amplifier on two of the DP-777's digital inputs. AD: "The DP-777's characteristic sound was one of openness, a generous sense of scale, detail without artifice, and a barely perceptible but undeniably consistent timbral warmth." JA was disappointed by the DP-777's measured performance in HD mode. (Vol.35 No.3 WWW)

AURENDER FLOW DAC—HEADPHONE

AMPLIFIER: \$1295.95

In the increasingly populous field of USB DACs, the Flow leaves its mark by being compatible with iOS and Android smartphone sources. Additionally, this compact, South Korean-made DAC, powered by rechargeable lithium-ion batteries, can accept an mSATA drive (not included) of up to 1TB, thus giving it the ability to hold a great deal of music on its own. The Flow supports resolutions of up to 32-bit/384kHz, as well as DSD64 and DSD128, and allows the user to select from a range of filters. Despite an overall "light tonal balance" that made this DAC—headphone amp a better match for "relatively dark-sounding headphones like the Audeze LCD-Xes," JA enjoyed his time with the Flow: "a beautifully made, beautiful-looking, beautiful-sounding, and beautifully versatile audio component." On JA's test bench, the Flow delivered "superb measured performance." (Vol.38 No.6 WWW)

BEL CANTO E.ONE DAC3.5VB MK.II: \$3495 ★

Like other Bel Canto products, the e.One DAC3.5VB is roughly half the width of a typical audio component and boasts a black-painted steel chassis with a beautifully milled faceplate of naturally finished aluminum. It accepts resolutions up to 24-bit/96kHz and offers a wealth of inputs: RCA and BNC digital, balanced AES/EBU digital, TosLink, ST fiber-optic, and a single pair of analog RCA jacks. While its D/A section is similar to that found in Bel Canto's e.One DAC3, the DAC3.5VB has revised jitter-rejection circuitry for improved performance with high-jitter sources. Meanwhile, the optional VBS1 power supply (\$1495) provides 12V DC and adds heroic LC filtering and energy storage. EL was most impressed by the Bel Canto's ability to produce big soundstages with exceptionally quiet backgrounds. Adding the VB-REF power cable (\$495) opened up those stages even more, reduced treble grain, and lowered the perceived noise floor. On the test bench, the Bel Canto exhibited high resolution and low jitter. The Bel Canto traded the sweet tone of Weiss's DAC202 for greater overall clarity and cleaner highs; compared with the dCS Debussy, the Bel Canto lacked some bass, but offered a warmer, more musical sound, with blacker backgrounds and fleshier images, said EL. Review was of original version; Mk.II has improved power supply and a master clock with lower phase noise. Compared to the Benchmark DAC2 HGC, the Bel Canto had a more laid-back overall sound, with a larger soundstage and better image separation, said EL. (Vol.34 No.6; Vol.35 No.1; Vol.37 No.2 WWW)

BENCHMARK MEDIA SYSTEMS ADC1 USB:

\$1795 \$\$\$

Housed in the same small case as Benchmark's DACs, the ADC1 is a 24-bit USB A/D converter with a Texas Instruments TAS1020B USB chip and a 128x-oversampling, delta-sigma AKM 5394 A/D converter chip. It offers a pair of balanced analog inputs on XLRs, two unbalanced AES/EBU Aux outputs on BNC jacks, a USB Type-B port, a Main TosLink output working in either S/PDIF or ADAT format, a Main balanced AES/EBU output on an XLR, and word-clock input and output on BNCs for use in multichannel systems, slaved to other converters. Though it lacked the Ayre Acoustics QA-9's delicately drawn soundstage, the Benchmark produced a natural, coherent overall sound, with clean high frequencies and weighty, extended lows, said JA, who also noted superb measured performance. (Vol.37 No.2 WWW)

BENCHMARK DAC1 HDR: \$1295 ★

Features two front-panel headphone jacks, RCA single-ended and XLR balanced analog line outputs that are switchable between line level, trim-pot set, calibrated level, and variable level. Compared to the three-times-more-expensive Marantz SA-14, JM found the original DAC1 to be "slightly more articulate in the musical line, and slightly more detailed in spatial nuances, particularly the localization of individual images in space, and in soundstage

depth." A terrific value, feels JA, thinking the DAC1 is a great way of getting modern sound from a DVD player or an older CD player. JA discovered superb measured performance in both the DAC1's digital and analog domains, and decided, "Whether considered as a standalone D/A converter or a versatile headphone amp, Benchmark's DAC1 is an audiophile bargain." The USB version adds a USB 1.1 port to take audio data directly from a computer at sample rates up to 96kHz and bit depths up to 24. Additional improvements over the standard DAC1 include: two gain settings for the headphone amp, a defeatable muting of the line outputs, and high-current output drivers for the XLR and RCA outputs. Used as the primary digital source in JA's system, the DAC1 USB offered a "very appealing" sound, with smoother highs and less grain than the original DAC1. Problems arose with the original sample, however, when using the Benchmark to play back 16-bit files from either a PC or a Mac via the USB connection. Subsequent modification of the DAC1 USB's firmware has eliminated dropouts of 16-bit audio data below -70dBFS while preserving the Benchmark's "superbly transparent soundstaging, clean high frequencies, and powerful lows," said JA. Compared to the YBA WD202, the Benchmark via USB had a slightly more forward, natural, precise sound, said JI. DAC1 PRE (discontinued in January 2013) adds a pair of unbalanced analog RCA inputs. It offered a sound that was "slightly toward the lean side of neutral," said ST. In terms of dynamic shadings, tonal color, and control flexibility, the Benchmark's performance was "remarkably close" to that of the best dedicated line-stage preamps. JA agreed: "As an analog preamplifier, the DAC1 PRE is about as good as it gets, measurement-wise." The DAC1 HDR offers slightly better build quality than earlier models and adds a motorized Alps volume potentiometer. National Semiconductor LM4562 op-amps are used throughout its analog stage, as well as Teflon RCA connectors. Though it maintained the tonal balance of earlier DAC1s, the HDR proved more musical and engaging, with a bigger soundstage, better solidity and separation of instruments in the stereo image, and better treble resolution, said EL. The Benchmark was tonally similar to the Bel Canto e.One DAC3.5VB, but lacked the more expensive DAC's high-frequency clarity, bass depth, and soundstage size, felt EL. Compared to the NuForce CDP-8, the DAC1 produced a slightly richer sound with more air and less bite, said WP. Compared with the Peachtree iDAC, the Benchmark offered greater clarity and control but was less forgiving of poor recordings, said JI; compared with the Musical Fidelity M1CLiC, the Benchmark offered greater resolution and accuracy; compared to the NAD M51, the Benchmark was just as detailed, but lacked some finesse and body, said JI. Compared to the much more expensive MSB Diamond DAC IV, the DAC1 USB produced a harder, more congested midrange, and had trouble controlling complex imaging, said JI. As of 2015, only the DAC1 HDR is still available. (DAC1, Vol.26 No.7, Vol.27 No.5, Vol.29 No.4, Vol.33 No.11 WWW; DAC1 USB, Vol.31 Nos.1, 7, & 10, Vol.32 No.3, Vol.33 Nos.6, 9, & 11, Vol.35 No.7 WWW; Vol.34 Nos.6 & 10, Vol.35 Nos.3 & 10 WWW)

CAMBRIDGE AUDIO AZUR 851D: \$1649 \$\$\$

Designed in the UK and manufactured in China, the Cambridge Azur 851D DAC-preamplifier is well-finished and somewhat surprisingly solid for its price range. It upsamples everything to 24-bit/384kHz, and most of its inputs can handle 24/192 datastreams. The Azur 851D also has a headphone jack, three switchable filter settings, a choice of balanced and single-ended outputs—and, for the fun of it, Bluetooth wireless connectivity. It also has a sophisticated user interface, addressable by both its menu-driven front-panel controls and its comprehensive remote handset. In JI's words, "the Cambridge Audio Azur 851D has bang for the buck all over the place. It approached the sound of DACs costing four times as much—closely enough, I feel, to satisfy most audiophiles on a budget." After the 851D left his test bench, JA observed, "The Cambridge Audio Azur 851D's measured performance is never short of superb. The fact that it can offer this level of performance for \$1500 puts many more-expensive processors to shame." In his Follow-Up, AD was put off by the

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Experience the physical impact of sound in solo, duo or as a Multiroom setup.

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Azur's "needlessly complex" control panel, but impressed all to hell and back by its musicality: "The Cambridge 851D is, indeed, a killer of giants. It is a D/A converter that uses its high resolution not to add amusical filigree or spatial puffery, but to enhance musical flow and drama. It really is *that good*." (Vol.37 No.12, Vol.38 No.2 WWW)

CLASSE CP-800: \$6000 ★

D/A preamplifier with serial and asynchronous USB inputs. (See "Preamplifiers.") On the test bench, the Classe's digital input showed about two bits' worth less resolution than the current state of the art, but was excellent-sounding. (Vol.35 No.9 WWW)

HALIDE DESIGN DAC HD: \$450 \$\$\$ ★

The DAC HD is a solid-state, bus-powered, plug-and-play digital-to-analog converter with tethered input and output cables. The circuitry, all surface-mount, is contained in a small (1.875 cubic inches), black-anodized, machined-aluminum enclosure, and is carried on a small double-sided printed circuit board. The input cable is Wireworld's Starlight USB (2m is standard; other lengths available); output is via two 6' lengths of silver-conductor cable terminated in Eichmann Silver Bullet RCA plugs. The 24-bit Texas Instruments TAS1020B USB interface chip operates in isochronous asynchronous mode with sample rates up to 96kHz. The DAC HD had an "analog-like ease to its sound," coupled with excellent reproduction of recorded space, said JA, who also noted "superb digital audio engineering." Compared to the AudioQuest DragonFly and Centrance DACport LX, the Halide DAC HD offered slightly smoother highs and produced more spatial depth with stereo recordings, said JA. AD noted that "the affordable and consistently listenable Halide DAC HD... has become my USB reference during the past year." He considers the US-made Halide to be among the greatest bargains, if not the great bargain, in perfectionist audio. (Vol.35 Nos.8 & 10, Vol.37 No.7 WWW)

HALIDE DESIGN USB-S/PDIF BRIDGE: \$395 ★

In this utilitarian-looking USB-S/PDIF converter, a 6' USB cable terminates in a 3"-long black aluminum tube with, on its other end, either a 75 ohm BNC plug or an Eichmann Silver Bullet RCA plug. The Bridge gets its 5V power from the USB bus and feeds the USB datstream to a Texas Instruments TAS1020B receiver chip, enabling the Bridge to operate in asynchronous mode without the host computer having to install a driver program. It operated properly at sample rates of up to 96kHz, and produced a very clean datstream free from timing uncertainty; and with its relaxed, grain-free sound, the Bridge excelled at conveying recorded ambience and low-level detail, said JA. (Vol.33 No.12 WWW)

LECTOR STRUMENTI DIGITUBE S-192: \$3195

The full-width (16.9") Lector Strumenti Digitube S-192, which AD described as well built and well styled "without silly excess," is a D/A converter whose only user control, apart from its power switch, is a pushbutton that selects among its five digital inputs: RCA, BNC, TosLink, XLR (for AES/EBU), and USB. Its Japanese AK4397 DAC chip provides 32-bit performance at up to 192kHz, and it has an analog (non-switching) power supply and, in its analog output section, a pair of ECC81 dual-triode tubes. Using the Digitube primarily as a USB processor with his iMac and his decidedly tube-friendly music system, AD found that it offered "a near-analog portrayal of... colors and textures" and excellent impact and detail resolution, although its sense of scale was bested by the far less expensive Halide DAC HD. Yet in measuring the Digitube, JA noted "truly dreadful measured performance in the digital domain, along with [a] disappointing showing in the analog domain"—in light of which, greater-than-usual buyer circumspection seems appropriate. "Class A, for special tastes only," sums up AD. (Vol.37 No.6 WWW)

M2TECH YOUNG DSD: \$1499

Elegant and modern in appearance, the M2Tech Young is a DC-powered D/A processor with a simple aluminum case, a recessed front panel, and a large alphanumeric display. It uses a Burr-Brown PCM1795 DAC chip with a custom oversampling minimum-phase filter. It handles resolutions up to 32 bits via USB (24 bits via S/PDIF or AES/EBU), and sample rates up to 384kHz via USB (192kHz

via S/PDIF or AES/EBU). While the Young lacked some accuracy and precision, it nevertheless managed an excellent balance of detail and warmth, said JI. Review was with the Palmer Power Station battery power supply, now replaced by the Van der Graaf low-noise power supply (\$1199). Adding the Palmer resulted in significantly more focus and clarity. "The M2Tech combo seduced me," JI concluded. Current version will decode DSD128. (Vol.36 No.5 WWW)

MUSICAL FIDELITY M6DAC: \$2999

The M6DAC is a remote-controlled D/A processor with two user-selectable digital filters. (JA admits to hearing no difference between the M6DAC's digital filters, which don't measure differently below 60kHz.) It offers a full complement of digital inputs (balanced AES/EBU, TosLink and coaxial S/PDIF, asynchronous USB-B, and Bluetooth operating with aptX decoding) and uses a dual-differential, 8x-oversampling, 24-bit delta-sigma DAC chip with asynchronous upsampling on all inputs to 192kHz. Music played via Bluetooth ultimately sounded flat and uninvolved, but was fine for casual listening. From its USB or AES/EBU connections, however, the M6DAC produced clean highs, a natural midrange, and authoritative bass. "Musical Fidelity's M6DAC is a superb-sounding, versatile D/A processor," JA concluded. (Vol.36 No.6 WWW)

MUSICAL FIDELITY V90-DAC: \$299 \$\$\$

Intended as a replacement for their V-DACII—itsself one of ST's longtime reference components—Musical Fidelity's V90-DAC is housed in the same 6.6" by 4" by 1.8" brushed-aluminum case that characterizes the rest of the V90 line. This 24-bit converter, which uses a 32-bit Burr-Brown PCM1795 DAC chip, delivers up to 192kHz performance through its single coaxial (RCA) input and up to 96kHz through its USB and two optical TosLink inputs. According to ST, compared with its predecessor, "the V90-DAC offers still greater low-level resolution, superior dynamics, and fatigue-free listening." JA took the V90-DAC for a spin, going so far as comparing it with his current reference, the Auralic Vega. He noted the MF's combination of smoothness, naturalness, and detail, combined with good spatial properties—but he felt the V90-DAC was lacking, by comparison, in momentum and bass power. JA's measurements uncovered "a strange rise in the noise floor around the 19 and 20kHz tones, in only the right channel"; otherwise, the V90-DAC "definitely punched above its weight on the test bench." (Vol.37 Nos. 4 & 8 WWW)

MYTEK STEREO192-DSD-DAC: \$1495 \$\$\$

The Stereo192-DSD is a two-channel DAC with S/PDIF, AES, TosLink, FireWire, and two USB (1.1 and 2.0) inputs; a preamp version adds analog RCA inputs and outputs and XLR analog outputs. KR stacked three Mytek's for multi-channel DSD playback: The sound was clean and engaging, with brilliant highs, potent bass, and outstanding reproduction of space; compared to the Oppo BDP-105, the Mytek stack provided a more vivid, immediate, and open sound, with a wider and slightly more forward soundstage, said KR. "A successful proof of concept," he concluded. ML used the Mytek between a FireWire jack on his iMac and a pair of Dynaudio Excite X14a active speakers, and described the combination as offering "the most full-range, engaging sound I've experienced on my desktop." (Vol.36 No.7, Vol.38 No.9 WWW)

B

AUDIOQUEST DRAGONFLY V1.2: \$149 \$\$\$

Using Gordon Rankin's "Streamlength" asynchronous USB technology and made in the US, the DragonFly measures 2.5" long, weighs three-quarters of an ounce, streams up to 24 bits and 96kHz, and plugs directly into the user's laptop or desktop computer. Included among its 107 internal parts are a Texas Instruments TAS1020 controller chip, a 24-bit ESS Sabre DAC, and a Burr-Brown headphone amp with a 64-step analog volume control. One-millimeter microdot LEDs enable the dragonfly emblem on the DAC's zinc-alloy case to change color in accordance with the sampling rate of the file being played: green (44.1kHz), blue (48kHz), amber (88.2kHz), and purple (96kHz). The original DragonFly had a well-balanced overall sound, with good tonal color and superb texture,

but lacked the spatial depth and timbral sophistication of the Halide DAC HD, said AD. "Class B with two thumbs up," sez SM of the first version, adding that when used to drive Skullcandy's Navigator headphones, the DragonFly created a big, bold sound with rich tone color and tight image focus. Aside from some small, tidy certification markings on its backside, the DragonFly v1.2 is identical in size, shape, and functionality to the original model. Upgrades include a revised power supply and a simplified, more direct signal path between the DAC and headphone module. Where the original excelled in clarity and detail, v1.2 added a richer, more colorful midrange, improved spatial abilities, and a greater sense of ease, said SM. (Vol.35 No.10; Vol.36 No.8; Vol.37 Nos.3 & 4 WWW)

CAMBRIDGE AUDIO DACMAGIC XS: \$199 \$\$\$

As with the well-known AudioQuest DragonFly and other portable models, the UK-designed, Chinese-built Cambridge Audio DacMagic XS gets all the power it needs from the USB bus of the associated computer; unlike those products—but like the Meridian Explorer—the DacMagic XS connects to its host not with an integral USB plug, but via a USB mini-B jack and 6"-long cable (included): an arrangement described by SM as "inelegant" and "awkward." Still, the DacMagic XS, which uses the ESS Sabre ES9023 DAC chip and supports sampling rates of up to 192kHz when connected as a USB 2 device, impressed SM with sound that was, "in a word, glorious." The Cambridge DAC offered "greater top-end clarity and extension than the [AudioQuest DragonFly], but with a richer, more relaxed overall sound than the [Audioengine D3]." (Vol.37 No.4 WWW)

CENTRANCE DACPORT LX: \$199.99 \$\$\$ ★

CENTRANCE DACPORT: \$249.99 ★

USB bus-powered D/A processor with or without (LX) volume control. See "Headphones & Headphone Accessories," where it is rated Class B. Used as a single-input preamp between a laptop source and a pair of Rogue M180 monoblocks in EL's main system, the DACport produced a large soundstage, a slightly rolled-off but grain-free treble, and a tube-like midrange. Compared to the Benchmark DAC1 HDR, the DACport lacked resolution and bass weight, but always sounded musical and tonally balanced. LX version sounds clearer, more transparent, and is rated Class B as a D/A processor. A less expensive version of Centrance's DACport, the LX dispenses with that model's volume control and can be used as a regular USB D/A processor. Like the original, the LX operates in adaptive isochronous USB mode rather than the theoretically better asynchronous mode, but nevertheless performed well on the test bench, showing no jitter-related sidebands. Compared to the original DACport, the LX offered a similarly smooth and grain-free treble, but was slightly clearer and more transparent. However, the LX couldn't match the smoothness or superb sense of space provided by the significantly more expensive Halide DAC HD. "Centrance's DACport LX offers superb sound quality at an affordable price," concluded JA. (Vol.33 Nos.6 & 10, Vol.35 No.10 WWW)

CHANNEL ISLANDS AUDIO TRANSIENT MK.II:

\$699

Housed in a small (4.45" W by 2.9" H by 5.25" D), nicely finished aluminum case, the Transient Mk.II is an asynchronous USB DAC with a 24-bit volume control and three digital outputs: S/PDIF via 75-ohm BNC, I2S via mini-DIN, and differential I2S via an HDMI jack. Six front-panel LEDs indicate the incoming signal's sampling rate: 44.1, 48, 88.2, 96, 176.4, or 192kHz. In a case identical to the Transient's, the optional VDC-5 Mk.II high-current power supply (\$329) feeds the Transient a linear 5V DC at 2.5A for reduced noise and ripple. Though it lacked some high-frequency focus and ease, the Transient Mk.II produced a well-balanced overall sound, with good soundstage size, respectable bottom-end heft, and a clean midrange, said JI. Measured performance was somewhat disappointing, however; JA found that, even with 24-bit data, the Transient offered resolution of just over 17 bits. (Vol.37 No.3 WWW)

IFI AUDIO IDAC: \$299

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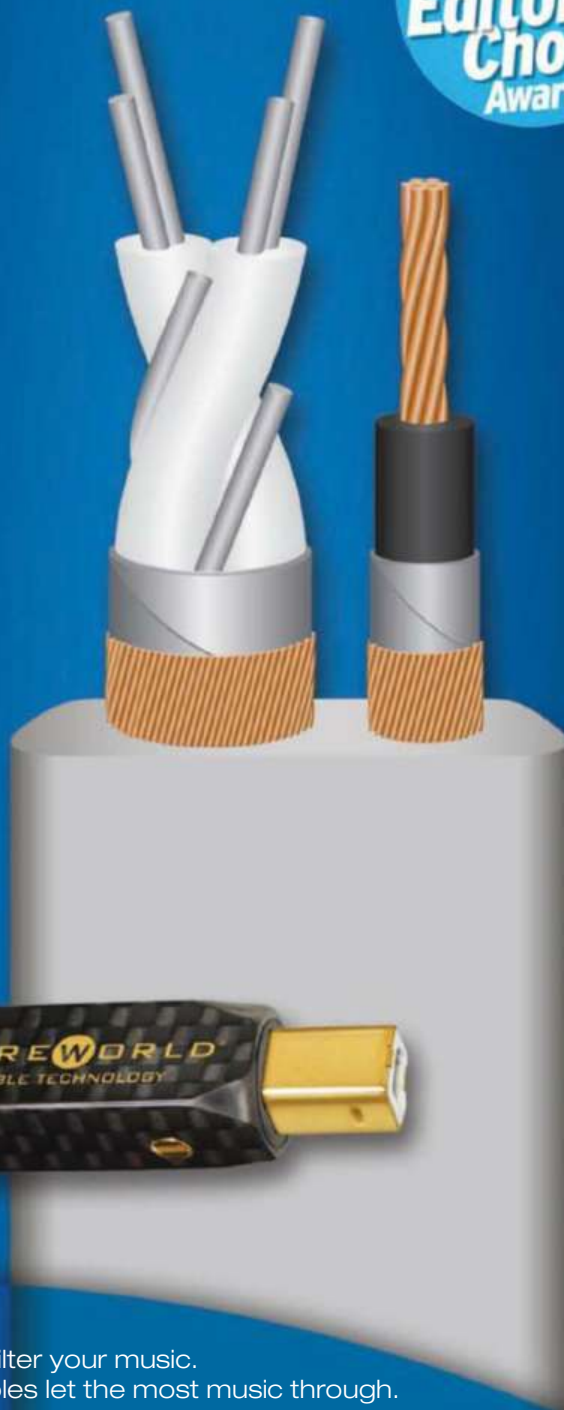
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DNA Helix U.S. Patent #8,569,627



The iDAC, iFi's first product, is a sleek, single-box D/A converter built into a 6"-long aluminum extrusion with an attractive textured finish. It uses an ESS Sabre DAC chip capable of handling resolutions up to 24-bit/192kHz, and has a single USB-B input, a pair of RCA jacks for line output, and a 3.5mm headphone jack with volume control. It can be powered by the user's computer or by iFi's iUSBPower 5V power supply (\$199). Compared with the AudioQuest DragonFly, the stock iDAC had a better overall sense of touch on strings and percussion, and revealed greater richness and complexity in hi-res music files, said AD. With the iUSBPower powering the iDAC, Art noted a subtly clearer sense of force in note attacks and better spatial presence around voices. "Highly recommended," he concluded. (Vol.36 No.5 WWW)

MERIDIAN EXPLORER: \$299 \$\$\$

Made in England, the Explorer is a 4"-long USB D/A headphone amplifier built into a lightweight aluminum-alloy tube with a hard-anodized finish. A plastic cap at one end incorporates a USB mini-B jack, while a similar cap at the other end holds two 3.5mm jacks: one for headphones, the other for line-level audio output. The Explorer operates in asynchronous mode and has a 24-bit/192kHz Texas Instruments PCM5102 converter chip; three small LEDs on the Explorer's upper surface indicate the sample rate of the incoming music file. Its 130mW headphone output incorporates a 64-step analog volume control, while the line-output jack is fixed in level. Though it lacked the Halide DAC HD's timbral richness, the Explorer had an airier overall sound, with detailed highs, a good sense of scale, and generous lows, said AD. JA noted "generally superb" measured performance. (Vol.36 No.9, Vol.37 No.10 WWW)

MUSICAL FIDELITY MIDAC: \$799 \$\$\$ ★

The MIDAC digital-to-analog converter uses two dual-differential Burr-Brown D/A chips, has a choke-regulated power supply, and offers coax, TosLink optical, AES balanced, and USB inputs, as well as standard RCA and balanced XLR outputs. While its USB input is limited to 16-bit/48kHz data, the M1 can handle any S/PDIF signal at sample rates up to 192kHz. With its astonishingly low noise floor, the M1 produced outstanding low-level resolution, crisply articulated transients, rhythmic certainty, and tonal purity. "A stunning bargain," ST decided, adding that this DAC "goes for a song but has a very, very low noise floor. The sound quality is highly resolving and, at the same time, non-fatiguing." Compared to the Rega DAC, the MIDAC lacked tonal richness but sounded lighter and quicker, with an airier top end and more space between the notes, said ST. The MIDAC demonstrated superb rejection of jitter on all its inputs and offered overall measured performance that was close to the state of the art, found JA. Borderline Class A but "You will need a very, very good system to realize how great this DAC is!" warns ST. Latest version has a revised power supply and uses the popular Texas Instruments TAS1020B USB receiver, operating in the optimal asynchronous mode, to handle resolutions up to 24-bit/96kHz. While the measured performance of the original MIDAC was marred by low-level power-supply spurs, the latest sample produced a much lower noise floor, found JA. (Vol.34 Nos.3, 5 & 6, Vol.36 No.1 WWW)

REGA RESEARCH DAC-R: \$1195

This new iteration of the plain-named Rega DAC (the original was reviewed in Vol.34 Nos.5 & 10 and Vol.35 No.2) contains changes both small—the DAC-R's longer case (for better power-supply layout), and improved firmware and power connectors—and large: Rega's digital processor now has an XMO5-based, 24-bit/192kHz asynchronous USB input. The internal DACs are twin Wolfson WM8742 chips implemented without upsampling, allied to an output section built with discrete transistors. A choice of three user-selectable filters is offered, though the still-compact case—8.4" wide by 3.1" high by 12.5" deep—lacks a headphone jack. Using the Rega as an adjunct to his home recording studio, JI found that, while listening to vocal feeds, the DAC-R added a little sugar—"a slight warmth or sweetening"—that he didn't hear through his trusted Benchmark DAC2 HGC. (JI: "I liked it. The singer

preferred it.") He also found that the DAC-R "produced a wonderful soundstage, floating aural images in space where they should be, with plenty of detail and depth." Apart from some artifacts that appeared related to the chipset's less-than-Gulag Archipelago degree of isolation from the power supply, JA's measurements suggest that the DAC-R "offered measured performance that was beyond reproach." Borderline Class A. (Vol.38 No.8 WWW)

SCHIIT BIFROST: \$349 \$\$\$

Made in the US, the Bifrost is a solid-state D/A processor with three digital inputs (coaxial, TosLink, asynchronous USB) and a pair of RCA output jacks, housed in an attractive brushed-aluminum chassis. It uses a 32-bit delta-sigma AKM4399 chip coupled with a fully discrete JFET analog section and handles signals of any resolution up to 24-bit/192kHz at all of its inputs. Compared with the AudioQuest DragonFly, the Bifrost produced a larger, more open soundstage, with more depth and improved layering of instruments; compared with the Benchmark DAC1, the Schiit traded resolution and accuracy for natural musicality, said JI. "The Schiit Bifrost is a carefully designed and beautifully built DAC," he decided, recommending high Class B. Uber Analog stage adds \$70, Gen 2 USB input adds \$100. (Vol.36 No.8 WWW)

WADIA 121DECODING COMPUTER: \$1299

The 121decoding computer is a solid-state, remote-controlled D/A processor and headphone amplifier housed in a compact (8" W by 2.7" H by 8" D) case of black powder-coated aluminum. It has balanced and unbalanced outputs, BNC and RCA coax digital inputs, TosLink and asynchronous USB input jacks, a three-pin AES/EBU socket, a seven-pin connector for the external power supply, and a front-panel headphone jack. All digital inputs can accept data rates up to 24-bit/192kHz. Compared with the Benchmark USB DAC, the Wadia lacked bass definition and overall clarity; compared with the M2Tech Young, the Wadia sounded pleasant and polite, but lacked resolution, said JI. On the test bench, the Wadia's AES/EBU input behaved correctly, but its S/PDIF and USB connections failed to output 24-bit resolution. (Vol.36 No.7 WWW)

C

ARCAM RBLINK: \$249

The rBlink is a very small (2.9" W by 1" H by 3.9" D) Bluetooth audio receiver and digital-to-analog converter with RCA analog and S/PDIF coaxial outputs. It uses Arcam's implementation of CSR's audio-optimized aptX Bluetooth codec and a Burr-Brown PCM5102 DAC chip. Installation was simple and the Bluetooth sound was always easy to enjoy, said Sam. "Highly recommended," he concluded. JA's measurements of the rBlink suggest that its sound quality will very much depend on the codec used to stream audio data to it; the AAC codec appeared to preserve resolution at the expense of noise-floor modulation and enharmonic spurs, while the aptX codec sacrificed absolute resolution in favor of preserving a random noise floor. Though data streamed via Bluetooth sounded somewhat brash and compressed vs that same data sent via a TosLink connection, the rBlink was surprisingly enjoyable, said JA. "Plug the Arcam's S/PDIF output into your high-end D/A processor and you have a convenient and legitimate source of music," he concluded. (Vol.36 No.12, Vol.37 No.3 WWW)

AUDIOENGINE D3: \$149 \$\$\$

The Chinese-built Audioengine D3, like the physically similar—and similarly portable—AudioQuest DragonFly, is a combination D/A converter and headphone amplifier with a USB standard A plug at one end and a three-conductor, 3.5mm mini-jack at the other. Its shiny aluminum case conceals an Asahi Kasei Microdevices AK4396 converter chip, a Texas Instruments LM49726 op-amp, and TI's popular TAS1020B USB receiver, with firmware for asynchronous streaming. Headphone users will delight in knowing that the Audioengine's price includes a 3.5mm-to-1/4" jack adapter; those who wish to drive their audio systems with the D3's 2V RMS output must supply their own miniplug-to-RCA-plug cables. SM considered the D3, fresh out of the box, "too sharp on top"—even when he factored in the inherent top-end emphasis of the

Skullcandy Aviator 'phones he was using. But the brightness moderated over time, "though not at the expense of [the D3's] intoxicating speed and vibrant high-frequency color." (Vol.37 No.4 WWW)

IFI NANO iDSD DAC: \$189

A mere 16 years after the DSD format first appeared on the domestic-audio market, one can now buy a cigarette-pack-sized DSD DAC with an asynchronous USB input for just \$189. That product, the iFi nano iDSD, includes a lithium-polymer battery that's automatically charged via the USB bus, and supports PCM resolutions up to 32-bit/384kHz. Used in a budget desktop system with a pair of Tannoy Reveal 402 active speakers, the iFi nano iDSD impressed ML with sound that was "rich and full, with a lovely dimensional quality—the last something that often goes missing from the sound of DACs in this price range." (Vol.38 No.9 WWW)

SONOS CONNECT: \$349 ★

SONOS CONNECT:AMP: \$499 ★

"More sophisticated than the Squeezebox," said JA. The user-friendly Sonos system sets up its own proprietary, encrypted audio network and can even dispense with the partnering computer if necessary, working with a network-attached storage hard drive that can operate as a stand-alone source of media files. Installation "couldn't have been easier," said JA. While he found the ZP80's analog outputs to be adequate for use in noncritical applications, JA felt the Sonos performed best with its digital output feeding an external DAC. Rating refers to the performance of the ZP80's analog outputs. Testing of the new ZP90 and ZP120 versions continues the recommendation. The ZP90 is now called the Sonos Connect. Review was of the very similar ZP80 and ZP100, respectively. While the ZP120 (now called the Connect:AMP) resembles Sonos's original ZP100 in using a class-D output stage, it offers slightly more power (55 vs 50Wpc), replaces the linear power supply with a switching supply, and provides more robust wireless networking capabilities. Though limited to sample rates of 44.1 and 48kHz, the ZP120 exhibited a well-managed gain architecture and performed admirably on the demanding high-frequency modulation test, found JA. Remote control app for the iPhone and iPod Touch dramatically improves user interface. (Vol.29 No.10, Vol.33 No.4 WWW)

D

APPLE AIRPORT EXPRESS: \$99 \$\$\$ ★

While the Airport Express works only with iTunes v4.6 or later (running on both PCs and Macs), is limited to 16-bit data, and functions only at a 44.1kHz sample rate, the combination of iTunes and the Airport Express offered an easy way to pipe CD-quality music around the entire home. "The beauty of this unassuming component," said JA, "is its S/PDIF data output, which allows the Airport Express to assume a respectable role in a true high-end audio system." However, its lack of an internal clock can lead to the first couple of seconds of songs being missed with DACs that are slow to lift their mutes. (Vol.28 No.5 WWW)

K

Chord Hugo TT, Lynx AES16e soundcard, UpTone Regen.

DELETIONS

Antelope Zodiac Gold, Arcam FMJ D33, discontinued; Rega DAC and Wavelength Proton replaced by new models; Electrocompaniet Classic ECD 2 not currently available in the US; ASUS Xonar Essence ST and STX, CEEntrance DACmini CX, not auditioned in a long time.

MUSIC SURROUND-SOUND COMPONENTS (OTHER THAN SPEAKERS AND DISC PLAYERS)

A

BRYSTON SP-3: \$9895 ★

The SP-3 combines a true analog preamp and a full-featured multichannel digital audio processor in a beautifully

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...with the Signature SE, I was struck by how the dynamic attack, the timbral envelope, and the decays of the notes sounded more like a real grand piano than I'd ever heard with this recording.

The day I removed the Signature SE from my system, to send it on to John Atkinson to be measured, my wife came home from work, looked at the rearranged components on my rack, and said, "What? The preamp's gone?"

Robert J. Reina, Stereophile June 2015



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built, relatively compact (17" W by 5.75" H by 14.25" D) case. It uses Bryston's high-quality 24-bit/192kHz DACs and offers a full suite of connections, including: eight HDMI inputs, two HDMI outputs, a 7.1 set of analog inputs and two 7.1 sets of outputs, four S/PDIF inputs, two AES/EBU inputs, and USB, RS-232, and Ethernet jacks. The sound from the SP-3's analog stereo inputs was "absolutely pristine, powerful, and a breath of fresh air," while digital S/PDIF or TosLink datastreams sounded transparent and convincing, with especially detailed and extended treble. "I think the Bryston SP-3 is the first great audiophile preamplifier-processor," KR concluded. "It almost redefines Class A sound for a surround processor." (Vol.35 Nos.5 & 7 WWW)

BRYSTON 9B-SST2: \$8095 ★

The 9B-SST2 power amplifier (called 9B-THX at the time of the review) boasts five channels, 120Wpc into 8 ohms, and is built like pro gear; ie, like a tank. Hand-soldered, double-sided glass-epoxy boards and elaborate grounding scheme front special-grade steel toroidal transformers. According to JA, "the excellent set of measurements indicates solid, reliable engineering." LG was impressed by this amp's speed, power, extension, its tightness and definition in the bass, and its "excellent" midrange. Fully the equal of more costly amps, with wide dynamic contrasts and "involving" vocals, and sonically similar to previous Bryston ST amps. THX conformance, a 20-year (!) warranty, and a reasonable price make this beefy, reliable amp an attractive package—a perfect choice, suggests LG, for home-theater and multichannel music systems. KR's long-term multi-channel reference. (Vol.23 No.9 WWW)

CLASSE CT-SSP: \$9500 ★

With its clean front panel boasting only a small touchscreen and a single knob, the solidly built CT-SSP surround-sound processor has an all-business look and is extremely simple to use while retaining complete control. It offers 10 output channels and multiple subwoofer configurations, and can support up to 20 audio/video source assignments and six different speaker configurations. Inserting the CT-SSP into KR's Connecticut system resulted in a deeper, wider soundstage, more impressive imaging, and seamless integration of the subwoofer and speaker outputs. "The performance of my system was elevated to a level beyond anything previous," said Kal. The CT-SSP sounded clean, tight, and powerful in KR's Manhattan system, with greater low-end weight and impact than the Meridian HD621/861 but a less expansive soundstage. (Vol.33 Nos.7 & 11 WWW)

CLASSE SIGMA AMP5 POWER AMPLIFIER: \$5000

From Classé's Sigma series of Chinese-made and comparatively budget-priced components comes their new AMP5, descended from the Sigma AMP2 stereo amplifier. The five-channel AMP5 shares the proprietary class-D technology of its two-channel brother, and gives the user a choice of inputs: RCA jacks for all five, or XLRs for the two front channels and RCAs for the remainder. On installing the AMP5 in his system, KR "immediately" heard a performance distinction, and ultimately praised the amp's midrange and treble as "pure and smooth—something of a surprise for a class-D amp—and the bass was powerful, delineated, and extended." His verdict: "performance that easily competes with or outperforms comparable non-switching designs." (Vol.38 No.5 WWW)

CLASSE SIGMA SSP**PREAMPLIFIER-PROCESSOR: \$5000**

The Chinese-built Classé Sigma SSP offers a less expensive alternative to the company's flagship, the SSP-800 (\$9500), without giving up too much in the bargain. The Sigma lacks an analog 7.1-channel input, and doesn't support composite or component video. Video inputs and outputs are limited to HDMI: eight of the former and only one of the latter. But the Sigma's parametric equalizer has more bandpass filters per channel—five instead of nine—and the less expensive component supports DLNA audio via Ethernet and AirPlay: "Ideas not yet born when the SSP-800 appeared," as KR puts it. Perhaps best of all, per KR, "the Classé Sigma SSP sounds more like a top-tier analog preamp than any pre-pro near its price." (Vol.38

No.5 WWW)

EXASOUND E28 MULTICHANNEL DAC: \$3299

Like exaSound's e18, the e28 uses a Sabre³² D/A chip capable of handling almost any PCM format with resolutions up to 32-bit/384kHz; but, while the earlier model could play DSD files only in stereo and at the base sampling rate of 2.82MHz, the e28 handles DSD sampling rates of 2.82, 3.072, 5.64, 6.14, 11.28, and 12.28MHz without converting the signal to PCM. In addition, the e28 includes an enhanced headphone output, and is specified as having lower distortion and noise than its predecessor in every measured mode. The sound was smooth and balanced overall, with sweet highs, a decidedly pure midrange, and an exceptional sense of space, said Kal. "The exaSound e28 is a real-world, second-generation, cutting-edge, multichannel DAC. I wouldn't hold my breath waiting for something better to come along any time soon," he concluded. (Vol.36 No.11 WWW)

ILLUSONIC IMMERSIVE AUDIO PROCESSOR**IAP 16: 16,000 CHF PLUS TAX**

Made in Switzerland, the unusually versatile—if very expensive—Immersive Audio Processor includes a five-band parametric equalizer in each of its 16 output channels. It processes two- and multichannel sources into one of 168 loudspeaker setups with the ability to manipulate the presentation's spatial distribution using three parameters: Center, Depth/3D, and Immersion. A superb control app provides an attractive graphic interface for accessing all of the IAP's functions, and works in real time so the user can immediately hear the effects of any adjustments. Though it lacks high-resolution decoding and doesn't accommodate multiple remote zones, the IAP has four HDMI inputs and one HDMI output, three coax and two optical digital inputs, three analog stereo RCA inputs, an XLR analog stereo output, and 16 additional XLR output connectors. Setup was relatively simple, operation was flawless, and the sound was remarkably clean, transparent, and balanced, said Kal. (Vol.37 No.1 WWW)

KRELL FOUNDATION PREAMPLIFIER/PROCESSOR: \$6500

Despite some wrinkles with the EQ system, this is an excellent-sounding and proficient pre/pro for audiophile ears. DSD capability is now being added. (Vol.37 No.5 WWW)

MCINTOSH MC303: \$11,000 ★

The three-channel, 300Wpc MC303 amplifier measures 17.75" wide by 12.4" high by 22" deep and weighs 155 lbs. Its large front panel is home to three blue power-level meters, two gold-rimmed knobs for meter illumination and power, and two substantial handles. Driving KR's B&W 802D loudspeakers, the MC303 delivered "the relaxed spaciousness and transparency of master tapes." There was a smoothness that extended through the frequency spectrum and seemed to erase the 802Ds' crossover transitions. The Mac couldn't quite match the firm bass or natural treble of the Bel Canto Ref1000 Mk.II monoblocks, however. (Vol.32 No.5 WWW)

MERIDIAN REFERENCE 861: \$18,995 ★

Multimedia controller with video, DSP-based decoding for matrixed and discrete multichannel audio sources. Functions as analog preamplifier-controller, digital and video controller, and A/D-D/A converter. Built-in, reprogrammable decoding of multichannel sources (Dolby Pro Logic, Dolby Digital, DTS, Ambisonic, etc.), plus THX and Trifield output from two-channel sources. All inputs digitally processed. Of Trifield's synthesized front-three-channels output, KR observed, "I came to regard the loss of air and the narrower soundstage as acceptable concomitants of the richer, tighter, better-defined central images." Audiophile air began to seem an artifact rather than an enhancement." DTS and Dolby Digital 5.1 music recordings "injected" ambiances whose acoustics superseded his room's. Multichannel is immersive, but our KR would rather not sit in the middle of a string quartet or orchestra. For two-channel, "equal to the best...beyond significant reproach." Multichannel, he declared, is the future, and Meridian is ready now. Logical but complicated setup and option procedures entered via PC; heavy dealer involvement is key to getting the best from this ultimate

component. But when the 861 is programmed for precise time alignment and amplitude balance among the speakers, and the crossover and bass management adjusted independently for the main, center, and rear channels, "everything seemed just right, and it made for consistently satisfying listening," he decided."The TriField DSP is a greatly advantageous feature that deserves more recognition. I felt confident that whatever little silver disc I put into the 800-861, it would sound superb." Meridian's new MConfig program replaces pages of configuration options with a drag-and-drop graphic user interface, and offers guided channel-level settings and room-correction setup routines. KR: "The upgraded 861 Reference's sound was delightfully and characteristically transparent." Still Class A after all these years." The updates in Version 6 of the 861 preamplifier-processor include SpeakerLink connections for Meridian's DSP speakers, an "endpoint" card for optimal performance with Meridian's Sooloos music-server systems, a proprietary apodizing upsampling filter for all digital inputs, and 24-bit/192kHz DACs. The 861 v6 partnered a delicately pure and transparent midrange and treble with exquisite delineation of voices and instruments, said KR. "The 861 has always been and still is the best-sounding audio processor I have heard," he concluded. Of the V8 refinements, some—most notably the newly required use of Meridian's SpeakerLink digital cable, which ensures a digital path from source to each speaker's integral amp—impact only users of Meridian's DSP speakers; others include a digital-input card that has a USB input—which itself may open the door for 24/192 input—as well as a linear power supply for lower noise, and redesigned oscillators and clocking that, according to Meridian, reduce jitter by 40%. KR's verdict: "Overall, the Meridian Reference 861, especially in its V8 incarnation, is still my favorite audio preamplifier-processor to live with." Price varies with options chosen. HD621 outboard processor (see "Digital Processors") adds HDMI capability. (Vol.23 No.2, Vol.26 No.8, Vol.29 No.7, Vol.34 No.5, Vol.37 No.11 WWW)

MERIDIAN HD621 HDMI AUDIO PROCESSOR: \$2995 ★

Meridian's HD621 HDMI Audio Processor smoothly integrates six HDMI inputs, HD audio processing, and SD upsampling with any Meridian processor that can handle a Smartlink/MHR, including the G61R, G68, C61R, and the 861. It extracts the PCM audio data from the HDMI input, FIFO-buffers the PCM, and up/downsamples it for output to the main processor. Upsampling is accomplished by "apodizing" filters identical to those used in the Meridian 808i.2 player-preamp. HDMI from the HD621 sounded "more detailed and open" than PCM data via the Oppo DV-980H's three S/PDIF connections, while "Red Book" CD sounded "superb" through the Meridian. "So rejoice—the HD621 brings HD audio to Meridian systems, and it sounds superb with non-HD sources as well," said KR. (Vol.32 No.9 WWW)

NAD MASTERS SERIES M17: \$5499

In KR's view, NAD's Masters Series of products has of late taken a turn from the conservative to the adventurous—evidence of which he sees in the Masters M17, which contains individual, updatable modules for digital video, analog video, digital audio, and analog audio. Although the current model lacks a USB port and audio-data Ethernet port, a fifth module, to support streaming and Bluesound, is said to be in the works. Although KR criticized the poor positioning of the front-panel Off/Standby switch, he declared that "the M17's remote control was an unalloyed delight: slim, and just hefty enough to feel good in the hand." According to KR, "The M17's sound, too, was delightful." He noted dynamics that were "precise and satisfying," and bass that was "delivered with authority"—and that "playing hi-rez and/or multichannel files from my server, connected to the M17 via HDMI, was simply glorious, especially as these signals were passed through a Dirac Live speaker-and-room-correction filter set at [24-bit/96kHz]." (Vol.38 No.1 WWW)

NAD MASTERS SERIES M27: \$3999

"No mere afterthought to the Masters M17 pre-pro," according to KR, the Masters M27 is a seven-channel class-

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MUSIC SURROUND-SOUND COMPONENTS (OTHER THAN SPEAKERS AND DISC PLAYERS)

D power amp based on the recent Hypex Ncore module. Single-ended (RCA) and balanced (XLR) inputs are provided for all channels, and the Masters M27 is rated at 250Wpc—or 180Wpc with all seven channels driven. A mildly wonky on/off switch was the only fly in this multichannel ointment: KR praised the M27's sound as "notably clean and punchy," adding that "[the amplifier's] midrange and treble were completely free of any grain or, significantly, the grayish character that is a consistent flaw in the sounds of many of the otherwise excellent class-D amps I've used." (Vol.38 No.1 WWW)

PARASOUND HALO A 31: \$3295 \$\$\$ ★

Based on circuitry developed by John Curl for the highly praised Halo JC 1, the three-channel A 31 power amplifier is rated to deliver 250Wpc into 8 ohms or 400Wpc into 4 ohms. Like other Halo models, the A 31 is solidly built and has a clean, attractive, brushed-aluminum faceplate. On the rear panel are three groups of connectors/controls, one per channel, including balanced and unbalanced inputs and gain controls. Though it lacked some upper-bass richness, the A 31 had a "clean, luminous" overall sound, with a sophisticated, detailed treble; rich, clean midrange; and firm, extended bass, said KR, adding that "the sound is full, balanced and detailed and packs a wallop." (Vol.35 No.9 WWW)

PARASOUND HALO P 7: \$2295 \$\$\$ ★

The Halo P 7 is a full-featured analog stereo preamp with six stereo inputs, balanced and unbalanced outputs, front-panel headphone and MP3 jacks, and an MM/MC phono preamp. It also provides two 7.1-channel unbalanced inputs that can be set for home-theater bypass, optional bass management for all sources, and RS-232/12V connections to integrate with modern A/V systems. With its "delightfully open, balanced sound" and outstanding versatility, the Halo P 7 is "the category killer of analog multichannel preamps or HT bypass," raved KR. (Vol.32 No.1 WWW)

B**ANTHEM MRX 710: \$1999**

Made in China, the 90Wpc MRX 710 (originally called MRX 700) is Anthem's top-model audio/video receiver. It has all the requisite A/V connections, including USB and Ethernet inputs; is compatible with HD radio and iTunes tagging; comes with a complete Anthem Room Correction kit; and uses a large toroidal power transformer. Though it lacked the transparency of Integra's DHC-80.2 and couldn't match the bass clarity of Bryston's 9B-SST, the Anthem offered a warm midrange, well-focused images, and a deep soundstage, said KR. (Vol.35 No.1 WWW)

EMOTIVA XMC-1 PREAMPLIFIER-PROCESSOR: \$2499 \$\$\$

The US-made Emotiva XMC-1, a 7.2-channel preamplifier-processor in a substantial (21 lbs) enclosure, offers more controls than its more austere high-end brethren (the Classé Sigma comes to mind) while forgoing needless bells and whistles: a user interface that Goldilocks and KR would describe as "just right." KR was also impressed by the XMC-1's "exemplary" OLED screen, which displays three lines of information, and the "outstanding" range of controls afforded by its front panel and remote handset. Of perhaps greatest interest is the XMC-1's distinction as the first affordable pre-pro to include Dirac Live room-correction software—in Limited Edition (LE) form—and a calibrated USB microphone; Emotiva offers a \$99 upgrade for users who wish to upgrade to the full version of Dirac Live. KR's verdict: "I found the XMC-1 to be a superb-sounding pre-pro for all media." (Vol.38 No.7 WWW)

MARANTZ MM8077: \$2399

The 150Wpc MM8077 is a seven-channel power amplifier. Each channel has selectable unbalanced RCA and balanced XLR inputs, driven by a common power supply equipped with a huge transformer and a generous capacitor reservoir. The MM8077 matched the much more expensive Bryston 9B8T in terms of power, transient response, and imaging, but lacked some bass definition and control, said KR. An excellent multichannel amplifier, and a perfect partner for Marantz's AV8801 pre-pro, he concluded. (Vol.36 No.3 WWW)

MINIDSP U-DAC8: \$299 \$\$\$

According to KR, miniDSP's new U-DAC8 is, "by an order of magnitude, the least expensive multichannel DAC on the market." The PCM-only U-DAC8 handles resolutions up to 24-bit/192kHz, is powered by a 5V wall wart, and is addressed by a front-mounted USB Type A jack. Although the U-DAC8's better-than-average detail resolution seemed accompanied by "a somewhat etched treble," KR was pleased with its performance, noting that "music sounded pretty clean across the audioband, with particularly good, tight bass." Referring to this newest miniDSP DAC as "a giant-killer," KR concluded that "the U-DAC8 is an excellent way to begin listening to multichannel files." (Vol.38 No.9 WWW)

NAD T 187: \$2999

The versatile T 187 preamplifier-processor's modular construction enables various combinations of: 7.1-channel inputs and outputs, six pairs of stereo analog inputs and outputs, several video inputs, up to six HDMI inputs, three each coaxial and optical inputs, one each coaxial and optical output, an Ethernet jack, and a mini stereo jack for mobile players. Additionally, the NAD's unique application of Audyssey's MultEQ XT room-correction software includes a custom target curve developed by Paul Barton. Easy to set up and use, the T 187 offered a full-bodied sound with a smooth, detailed treble, said KR. Paul Barton's target curve added a touch of warmth, with stronger, tighter low bass. "Even if it doesn't do everything possible, the NAD T 187 does everything right," concluded KR. (Vol.36 No.1 WWW)

ROTEL RMB-1585: \$2999

A powerful and transparent 5-channel amplifier. (Vol.37 No.9 WWW)

ROTEL RSP-1572: \$2199 ★

This compact, handsome preamplifier-processor offers six HDMI, two component, and two composite video inputs; two HDMI, one component, and four composite video outputs; four optical and three coaxial digital audio inputs; eight stereo analog inputs; one 7.1-channel analog input; and one USB input. Audio outputs include one optical, one coax digital, two stereo analog, and one analog 7.1-channel preamp output with dual jacks for two center and two subwoofer outputs. While the RSP-1572 lacks auto-setup and room EQ capabilities, its variable filters allow the user to effectively deal with room acoustics. The Rotel offered transparent highs, a clean midrange, and full bass, said KR. "Those of us who don't mind getting our hands dirty with some measurement tools can have it all with the RSP-1572: great sound and great looks," he concluded, though he adds that the room EQ is a bit challenging. (Vol.35 No.3 WWW)

C**NUFORCE AVP-18: \$1095**

Built into a slim, minimalist case, the AVP-18 multichannel preamplifier-processor offers two coaxial, one TosLink, one combination coax/optical, and four 24-bit/192kHz-capable HDMI inputs; USB A and B connectors; an output jack for a 12V trigger; an HDMI output; a TosLink output; and a 2x4 array of RCA jacks for the 7.1-channel analog output. An 11-filter parametric EQ is provided via a potent Cirrus chipset. Setup was relatively simple and operation was flawless. Although the NuForce lacked some soundstage depth and lower-midrange richness, its overall sound was well balanced and satisfying, with good detail resolution and image specificity, said Kal. "The all-digital NuForce AVP-18 is a good choice for an easy-to-use and easy-to-look-at preamplifier-processor," he summed up. (Vol.36 No.11 WWW)

YAMAHA AVENTAGE MX-A5000: \$2999.95

Measuring 17" W by 8.25" H by 18" D and weighing 56 lbs, the MX-A5000 is a massive and versatile 11-channel amp rated to deliver 150Wpc into 8 ohms. Rear-panel Channel Select switches and front-panel Speaker Select buttons permit a wide range of configurations, including: five-channel biamping, five main channels with two independently amplified zones, a triamped center channel in a mono- or biamped five-channel system, and other, more specialized arrangements. A perfect sonic partner

for Yamaha's Aventure CX-A5000 pre-pro, the MX-A5000 produced a clean, open overall sound, with a slightly soft treble, well-defined midrange, and solid bass, said Kal. "If you need 11 channels, regardless of how you choose to use them, I highly recommend Yamaha's MX-A5000," he concluded. (Vol.37 No.3 WWW)

K

Marantz AV-8802 processor, Merging Technologies NA-DAC multichannel DAC.

DELETIONS

Integra DHC-80.3, Marantz AV8801, Yamaha Aventure CX-A5000, all replaced by new models.

COMPLETE AUDIO SYSTEMS

A**ECLIPSE TD-M1: \$1300**

The TD-M1 system comprises a pair of desktop loudspeakers, each of which has a single 3" full-range driver in a reflex-loaded and vaguely egg-shaped enclosure, the latter made with an alloy frame and a molded exoskeleton. Of each TD-M1 pair, one enclosure also contains a 20Wpc digital amplifier and a 24-bit/192kHz USB D/A converter, the latter equipped for wireless streaming via Apple AirPlay. Aside from grousing about high-tech user controls that were slightly too obscure, AD had fun with the easy-to-install TD-M1 system, enjoying in particular its very accessible WiFi function. All in all, AD's time with the Eclipse system left him giddy: "I had a great time with this system whenever I used it—and it was always easy." (Vol.38 No.5 WWW)

B**BLUESOUND VAULT, POWERNODE, NODE, PULSE, DUO: \$449–\$999**

Bluesound is a new line of whole-house sound products from the Lenbrook Group, owners of NAD and PSB. The **Bluesound Vault** (\$999), which requires an Ethernet connection to the Internet, is an 11.5" W by 9.3" H by 8.1" D box containing an optical drive, a 24-bit/192kHz Cirrus-Logic sigma-delta DAC, and 1TB of storage. Inputs are Ethernet, WiFi, USB Type A, and, by means of an optional dongle, Bluetooth. Outputs include an analog RCA pair and digital TosLink capable of passing up to 24/192 data to an external DAC. The **Bluesound Pownode** (\$699), which looks identical to the Vault but is slightly smaller, is a network player with a 24/192 DAC. The Pownode has the same complement of inputs as the Vault, while its outputs are a subwoofer-out jack (RCA) and two pairs of binding posts for speakers. The Pownode can operate with or without the Vault; in the latter case, the Pownode will access music files from the user's NAS. The **Bluesound Node** (\$449) is—get ready for it—rather like the Pownode, but without (output) power. The **Bluestone Duo** (\$899) is, in the words of ML, "a straightforward satellite-and-(self-powered)-subwoofer loudspeaker system designed by Paul Barton of PSB Speakers [and] meant to be powered by the Pownode." And the **Bluesound Pulse** (\$699) is a 13.4-lb "network-ready boom box" that runs on AC wall current. With Bluesound products scattered throughout his home and with the system as a whole accessing files on his QNAP NAS, ML found the sound of the Bluesound "ecology" to be pleasantly rich and full, if, in some instances, a bit dark; with regard to the latter quality, inclusion of the Auratic Vega DAC restored the missing sparkle. "I enjoyed my time with the Bluesound components," ML stated, noting that the Pulse was perhaps the pleasantest surprise of the lot. (Vol.37 No.7 WWW)

TWO-CHANNEL PREAMPLIFIERS

Editor's Note: Apart from the CAT, Shindo, Placetec, and Promitheus, all the Class A preamplifiers offer

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balanced inputs and outputs. And unless noted, the preamplifiers listed do not have phono stages.

A AUDIO RESEARCH REFERENCE 5SE: \$13,000

The Ref 5 SE is a tubed, remote-controlled line preamp with six sets of balanced and unbalanced inputs, three sets of balanced and unbalanced outputs, and a unity-gain Processor input. It uses 6550C and 6H30P tubes for power-supply regulation, and four 6H30P dual-triodes in the analog stage. Improvements over the original Ref 5 include new Teflon and hybrid coupling and bypass capacitors, new internal wiring, and a vertically mounted circuit board that nearly doubles the earlier version's energy storage. The Ref 5 SE exhibited incredible detail retrieval, bold and nuanced tonal color, outstanding dynamic range, and large soundstages with a slightly forward perspective, said BD. "The Reference 5 SE gets my highest recommendation," he concluded. JA noted superb measured performance. Compared to BJR's reference Audio Valve Eclipse, the ARC offered longer decays and resolved more inner detail but lacked some low-end impact. (Vol.35 No.11, Vol.36 No.2 WWW)

AUDIO RESEARCH SP20: \$9000

ARC's first full-function, line-plus-phono preamp in ages—and their first-ever preamp to offer a headphone output—the new SP20 is a pure class-A, fully balanced, hybrid design. Its 19"-wide chassis blends styling cues from ARC's early days with a modern touchscreen, and the SP20's similarly modern remote handset provides control over volume, source selection, channel balance, cartridge loading, stereo/mono switching, absolute phase inversion, and more. The preamp uses a total of four 6H30 dual-triode tubes and provides 13.8dB of line gain, plus up to 58dB of phono gain. BJR cited the SP20's "detailed, delicate, extended high frequencies," "bass beyond reproach," and "superb resolution of detail"—and surprised some of us by declaring the new preamp's phono section superior to his (very) long-term reference, the Vendetta SCP-2D. Regarding line-stage performance, BJR maintained a slight preference for the better "high-level dynamic slam" of his Audio Valve Eclipse. JA's measurements gave the "well-engineered" SP20 a clean bill of health, noting in particular the phono section's "extremely accurate" RIAA equalization. (Vol.37 No.6 WWW)

AYRE ACOUSTICS KX-R TWENTY: \$27,500

It would seem an impossible task: improving on a preamplifier—the Ayre KX-R—that sounded better to JA than no preamplifier at all. But that was the hurdle set for the new KX-R Twenty, named in honor of Ayre's 20th year of operation. More of a complete redesign than an upgrade of the original, the KX-R Twenty employs AyreLock, a new, proprietary approach to power-supply regulation that seems equal parts calculus and poetry. Also involved were similarly big changes to the active circuitry, including the adoption, in this model, of the "diamond" output circuit of the company's X-5 series—if only because, in the words of chief engineer and CEO Charles Hansen, it proved to work "so insanely well." Of his time with the new Ayre, JA wrote, "Some highly resolving audio components achieve their transparency to what has been captured on a recording by emphasizing detail. The Ayre simply cleaned the window." JA's listening notes were ripe with examples of fine performance at various sonic tasks, but in the end, his view was holistic: "The Ayre evoked the words Peter Schaffer has Antonio Salieri saying, in *Amadeus*, about the entry of the solo oboe in this music: 'This was a music I'd never heard. Filled with such longing, such unfulfillable longing. It seemed to me that I was hearing the voice of God.'" (Vol.37 No.12 WWW)

AYRE ACOUSTICS K-5XEMP: \$4350 ★

Like all of Ayre's 5-series products, the K-5xe uses the Ayre Conditioner, a built-in RFI filter that works in parallel with the AC line to reduce background noise, grain, and hash. The original K-5xe added nothing to the original signal and had no sonic signature of its own. ST: "It just got out of the way" subsequently adding that this "superb solid state line-stage preamp is everything you could ask for: neutral, detailed, dynamic, exceptionally low noise,

fun to use." JA felt high Class B was a fair rating for the original version; the Maximum Performance (MP) version incorporates rare, low-noise Toshiba J-FETs for the output buffer stage. The K-5xeMP had dynamics equal to that of the original K-5xe, but produced quieter backgrounds and had a friendlier, more accurate overall balance, with better delineation of images within a wide, deep soundstage. Though it lacked the top-end air of the Parasound Halo JC 2, the Ayre sounded warmer overall, with a fleshier lower midrange. Its measured performance was "about as good as it gets for a solid-state preamplifier," said JA. Black finish adds \$250. (Vol.29 No.5 original version; Vol.34 No.6 MP version WWW)

BESPOKE AUDIO COMPANY PASSIVE: \$12,000

See AD's review in this issue.

BOULDER 2110: \$55,000

Given that its predecessor, the model 2010, enjoyed a 17-year run in Boulder Amplifiers' product line, much was expected of the new 2110 line preamplifier: a multibox solid-state model in which user functions are optically controlled to eliminate noise, and whose six inputs are characterized by an impressive degree of adjustability and flexibility of configuration. All of its inputs and outputs are fully balanced, addressed only with XLR jacks, and the 2110 goes the 2010 one better by adding a fully differentially balanced volume control. Using the Boulder 2110 with his darTZeel NHB-18NS mono amps in balanced mode, MF observed that "[it] produced image intensity, physicality, and solidity that were unprecedented in my experience. First take: a giant Wow." MF elaborated: "It made recordings I know to be truly exceptional sound even more so through my system." With the Boulder pre on his test bench, JA observed, "The 2110's distortion is so low, in fact, that it taxed my ability to measure it." JA ultimately pronounced the 2110 "the best-measuring preamplifier I have encountered" (Vol.38 No.3 WWW)

CLASSÉ CP-800: \$6000 ★

A new breed of audio component, the versatile CP-800 is a remote-controlled, solid-state preamplifier with a touchscreen display, DSP-implemented tone and equalizer controls, 10 digital inputs (AES/EBU, three S/PDIF on coax, four S/PDIF on TosLink, asynchronous USB, front-panel USB host connector), five analog inputs (two pairs balanced, three pairs unbalanced), and seven analog outputs (three pairs balanced, three pairs unbalanced, and a front-panel headphone jack). One of the first products to come from Classé's Chinese manufacturing plant, the attractive, solidly built CP-800 shares the curved aluminum front panel of earlier Classé Delta-series products. Though it lacked some flesh and warmth, the Classé produced a clean, clear, and detailed overall sound, with an especially delicate treble, said JA. On the test bench, the Classé's digital input showed about two bits' worth less resolution than the current state of the art, but its analog performance was beyond reproach. (Vol.35 No.9 WWW)

CONVERGENT AUDIO TECHNOLOGY SL1

RENAISSANCE BLACK PATH: \$9995 ★

The latest iteration of the heralded SL1 line stage boasts a new circuit-board layout and improved power supply. It also includes an A/V bypass, user-selectable gain, and a switch-selectable, moving-coil transformer for the phono stage. Compared to the SL1 Ultimate, the Renaissance offered greater transparency, resolution, and dynamics, said RD. JA noted "superb measured performance and an equally superbly linear circuit topology." Phono stage adds \$2000. (Vol.32 No.11 WWW)

DAN D'AGOSTINO MASTER AUDIO SYSTEMS

MOMENTUM: \$32,000

"Among the most beautiful pieces of audio gear" that MF has seen or touched, the Dan D'Agostino Momentum echoes the sculpted aluminum-with-copper, quasi-steam-punk cosmetics of the Dan D'Agostino Momentum power amplifier—but with a chunky, round volume control/level meter in place of the amplifier's chunky, round, output-power meter. As MF observed, "The complementary, balanced, zero-feedback Momentum is DC-coupled, has no capacitors in the signal path, and features fully discrete circuitry with no op-amps. Volume adjustment is via an optical controller and resistor ladder." User controls for

the line-level-only, low-gain Momentum—all available on the impressive remote handset, most on the front panel—include absolute signal polarity, channel balance, source selection, mute, and *tone controls*. The main unit and its curvy and cunningly designed outboard power supply—the former sits atop the latter—are electrically connected via a multipin umbilical. After listening, MF commented: "In the Momentum, Dan D'Agostino has produced a preamplifier that duplicates the Momentum amp's delicacy, transparency, three-dimensionality, and especially its liquidity and freedom from grain without softening transients—all floating above the blackest backdrops." Summing up his measurements, JA noted that "the Momentum preamplifier lives up to Dan D'Agostino's reputation for heroic audio engineering." (Vol.37 No.8 WWW)

DARTZEEL NHB-18NS: \$1,700 CHF ★

The "stunningly transparent" darTZeel offered spectacular transient speed, resolution, and decay, while providing an overall coherence that "made recorded music, analog or digital, sound much closer to live," said MF. Bass lacked some authority, and the sound sometimes had "a slight velvety finish." With its warm, vivid combination of red chassis and dark gold front and rear panels, the NHB-18NS "looks like it sounds." Its fully dual-mono design, lack of global negative feedback, and ultrawide bandwidths are meant to eliminate phase shifts at the frequency extremes. JA was "puzzled" by some aspects of the darTZeel's measured performance, particularly the much poorer performance through the balanced inputs and outputs, but was overall impressed by the level of audio engineering. Compared to the harmonically rich Musical Fidelity AMS Primo, the darTZeel offered a more clinical sound: tighter bass, greater transparency, more precisely defined images, shorter sustain, and a diminished sense of musical flow. Compared to Einstein Audio's The Tube Mk.II, the NHB-18NS sacrificed bass weight for greater top-end air, transient speed, and bass extension, said MF. The darTZeel matched the resolution and transparency of the mbl 6010 D while managing to sound less mechanical, said MF about his reference preamp as of summer 2008. (He bought one!) US price will depend on the exchange rate from Swiss francs. (Vol.30 No.6, Vol.31 No.10, Vol.33 Nos.5 & 10 WWW)

LAMM INDUSTRIES LL1 SIGNATURE: \$42,790

The dual-mono Lamm Industries LL1 Signature may not be the only four-box line preamplifier, but, according to BJR, it stands as "a stunning design" "stunningly executed." With design roots in the driver stage of Lamm's ML3 Signature power amp, the single-ended LL1 uses four high-transconductance 6N30P dual-triode tubes, connected in parallel, in the preamp stage of each channel, plus two 6X4 full-wave rectifier tubes in each channel's outboard power supply. In his listening tests, BJR described being "floored by the several areas in which [the LL1] achieved levels of performance I hadn't thought possible," mentioning in particular the Lamm's "sense of unfettered, dynamic ease and drama," its "clean, crisp, uncolored, fast, deep, gut-slammng bass" (we think he liked it), and the LL1's "ability to render each instrument within its own dynamic envelope." JA observed, "Summing up the LL1's measured performance is easy: This is a superbly well-designed preamplifier." (Vol.37 No.8 WWW)

LUXMAN CLASSIC CL-38U: \$4200 \$\$\$

With styling that brings to mind the Marantz Model 7C—especially if you "squint a little," per AD—the Luxman CL-38u preamplifier mates classic form with classic function by including a mono switch, rumble filter, balance control, tone controls (with switchable hinge frequencies), and a phono section, the latter with built-in step-up transformers for MC gain. All voltage-gain and buffering chores in the CL-38u are handled by eight dual-triode tubes, with rectification and some switching accomplished by solid-state devices. In AD's tube-happy system, the Luxman "presented music with natural, realistic warmth and color, and fine bass-to-treble balance," although with the "tone controls enabled, the sound was cloudier, less open." AD also praised the Luxman's "sheer speed and clarity of musical timing," ultimately describing the CL-38u as "not just a good value: It's an exceptional value." Reporting from

Where have all the panel speakers gone?

Two-channel and vinyl are alive and well - making a very impressive comeback. But, what about full-range ribbon and full-range electrostatic speakers?

Some of you remember the Old Days when many high-end dealers carried either a full-range ribbon or full-range electrostatic speaker. Magnepan is doing well (thank you very much). Maggies are sold in China, Russia, Australia, Viet Nam, Bangladesh— arguably the most successful full-range panel speaker company with worldwide distribution.

But to be candid, we liked it back when we had more competitors. Times have changed and fewer customers have the space for a full-range ribbon or electrostatic speaker. And unless you have heard one (properly set up), you might wonder why anyone would want a panel speaker.

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his test bench, JA gave the CL-38u a clean bill of health: it "doesn't appear to be compromised in any way, either by its versatility or by its exclusive use of tubes." (Vol.38 No.5 WWW)

MUSIC FIRST AUDIO BABY REFERENCE: \$8590 ★ Slightly larger than Music First's less expensive Classic v2, the Baby Reference passive preamp measures 9.75" W by 3.4" H by 10.1" D and is available with a black, blue, red, or clear anodized faceplate. Standard connections include two balanced XLR inputs, four unbalanced XLR inputs, and one pair each of balanced and unbalanced outputs. Like the Classic, the Baby Reference provides 24 discrete volume steps, including mute, but forgoes the Classic's +6dB gain switch and uses a larger, more complex transformer. The sound was smooth, sweet, and extended, with exceptional transient speed and surprisingly deep bass, said ST. "[The Baby Reference] is the best preamp I've had in my system," he concluded, "probably because it's not a preamp at all." Compared with the Promitheus Audio Reference TVC4, the Music First offered deeper bass, cleaner treble, greater openness, and less dynamic congestion, said ST. (Vol.35 No.10, Vol.36 No.5)

NAGRA JAZZ: \$11,650–\$14,500, DEPENDING ON OPTIONS

The Jazz is a tubed line preamp with one pair balanced and four pairs single-ended inputs, and one pair balanced and two pairs single-ended outputs. It uses a 12AX7 dual-triode input-stage tube and a 12AT7 gain-stage tube. Measuring 12" W by 3" H by 10" D and weighing 7 lbs, it has a faceplate machined from a solid billet of aluminum, giving it the rugged, purposeful look and feel common to Nagra components. Though it lacked some bottom-end impact, the Jazz had a clean, clear, revealing sound with an uncolored midrange, extended highs, and lightning-fast transients, said BJR. "I enjoyed every piece of music I listened to through the Jazz, even when it ruthlessly revealed differences in recording quality," he concluded. JA noted excellent measured performance. (Vol.36 No.4 WWW)

PARASOUND HALO JC 2 BP: \$4495 \$\$\$ ★

Styled to match the JC 1 power amplifier and finished in the same brushed, natural aluminum, the JC 2 exhibits a high standard of construction. Each channel of the fully balanced JC 2 is on a separate PCB, with the audio and control power supplies on separate circuits, isolated from each other by 3/8" thick aluminum partitions. ST was impressed by the JC 2's noiseless operation and excellent reproduction of space, which allowed music "to emerge intact—with body, bloom, and dynamics, with definition and detail—from an utterly silent background." JA agreed, but decided the JC 2 sounded best with warmer-sounding amplifiers and speakers, when it excelled in the areas of images and dynamics. "Perhaps the finest solid-state line stage I have heard," sums up ST. "This is what a great line stage does: lets all the other components perform at their best. The Halo JC 2 matched the Ayre KX-R in terms of openness and sparkle, but sounded leaner and could not reach the Ayre's level of deep musicality, said WP. Compared to the Simaudio Moon Evolution P-7, the JC 2 sacrificed body for leading-edge definition, felt JA. One of *Stereophile's* "Joint Amplification Components" for 2008. Configured for home-theater bypass, the BP version of Parasound's excellent JC 2 preamplifier (\$4795) has a revised circuit board and front-panel control board that make possible the hybridization of a traditional analog two-channel system with a modern digital multichannel system. The Halo JC 2 BP looks almost identical to the Halo JC 2, with only the Bypass LED on the front panel and the letters "BP" added to the labeling front and rear. It offers both balanced RCA and unbalanced XLR inputs and outputs. KR heard no difference between a direct connection from pre-pro to power amp and a connection via the JC 2 BP's bypass function. Owners of existing JC 2s can have their units upgraded to BP status for \$500. (Vol.30 No.12, Vol.31 Nos.3 & 11, Vol.32 No.3, Vol.34 No.6 WWW; BP version Vol.34 No.3 WWW)

PASS LABS XP-30: \$16,500

In its conventional two-channel model, the XP-30 comprises three separate chassis: one each for its control circuitry and power supply and each channel's audio circuit-

ry. Using additional chassis, the XP-30 can be expanded to as many as six channels. Each audio chassis has both a Master and a Slave analog output, duplicated on balanced XLRs and single-ended RCAs; and six analog inputs, also duplicated on balanced XLRs and single-ended RCAs. The XP-30 uses an integrated-circuit volume control. It virtually transported JA to recording studios and performance spaces, consistently drawing his attention to aspects of music rather than of sound. "The XP-30 has rekindled for me the concept that the beating heart of an audio system is the preamplifier," he said. Measured performance was superb. (Vol.36 No.4 WWW)

PLACETTE AUDIO ACTIVE LINE STAGE:

\$6995 ★

The Active Linestage is intended to combine the transparency of Placette's purist Remote Volume Control with a usable level of functionality, providing five sets of unbalanced inputs, two sets of outputs, and a tape loop. Its absolute clarity, focus, solidity, and transparency were unrivaled in BD's experience. "Highly recommended." Sold direct, with a lifetime warranty and 30-day refund policy. (Vol.30 No.11 WWW)

PROMITHEUS AUDIO REFERENCE TVC: \$890 \$\$\$

Made by Nicholas Chua in Kuala Lumpur, the TVC4 passive preamp is housed in a compact (12.2" W by 3.75" H by 9" D) chassis made of merbau, an endangered Malaysian hardwood. It has two transformers per channel, separate left and right volume controls, and offers four pairs of unbalanced inputs and two pairs of unbalanced outputs. Though it lacked the tight bass, extended treble, and transparency of the much more expensive Music First Baby Reference, the TVC4 produced a warm, rich, tube-like sound, said ST. "Promitheus Audio's Reference TVC4 is worth the money and more," he concluded. Add \$80 for shipping to the US from Kuala Lumpur. (Vol.36 No.5)

SHINDO MASSETO: \$13,500 ★

Like the less-expensive Aurigues, the Masseto is a full-function preamplifier, but adds a selectable choice between moving-magnet and moving-coil phono inputs. The dual-mono power supply is based on a pair of Philips 6X4WA rectifier tubes, the phono stage uses one Philips 6189W and one Philips 12AT7 per channel, and its line stage uses a single LCP86 triode/pentode per channel. With a "stunningly low noise floor," the Masseto consistently conveyed music in a way that allowed Art to become fully immersed in the performance. "Time after time," he said, "I found myself responding to my hi-fi the way I respond to real music." The Masseto's stock input MC transformer was "quiet in every way," and worked especially well with Art's Miyabi cartridge, providing "loads of texture, and enough drama to keep me happy indefinitely," he said. AD's reference preamp since 2007. Current model uses the same basic line, phono, and power-supply circuits found in the original, but has a fancier faceplate. Art has found that the Masseto does not respond well to isolation devices, aftermarket AC cords, or alternate tubes, and he recommends very gentle insertion and removal of interconnects to avoid damaging the Masseto's fragile Switchcraft RCA jacks. Still, the Masseto remains "satisfyingly musical and downright right," he said. "The most beauty you can buy for this kind of money." (Vol.30 Nos.7 & 10; Vol.36 No.6 WWW)

SIMAUDIO MOON EVOLUTION 850P: \$30,000

The solid and beautifully built 850P is a two-chassis, dual-mono line-stage preamplifier with three balanced and four unbalanced inputs, a monitor/signal-processor loop, and two sets each of balanced and unbalanced outputs. It uses Simaudio's M-Octave mechanical damping system to decouple the audio circuit board from the chassis with eight compliant feet, each made of an elastomeric material and pre-loading chosen for their ability to damp the frequencies relevant to that part of the board. The 850P's complex power supply incorporates 40 examples of Simaudio's unique Independent Inductive DC Filtering topology, and its M-Ray volume-control circuit allows the user to precisely and quickly fine-tune the level in increments of 0.1 or 1dB. The sound was exceptionally transparent, with expertly reproduced transients, sharp image

focus, and an outstanding sense of space, said BD. "No doubt about it," JA agreed—"Simaudio's Moon Evolution 850P is one of the best-measuring preamplifiers I have encountered." (Vol.36 No.12 WWW)

SIMAUDIO MOON EVOLUTION 740P: \$9500

The solid-state Moon Evolution 740P is a dual-mono line-level preamplifier that offers both single-ended and true balanced operation, the latter thanks to its differential audio circuitry. Its volume control is Simaudio's own M-eVOL2 stage, comprising 530 discrete steps of 0.1dB each, and its power supply is built around the similarly orthographically odd M-LoVo voltage-regulator stage. FK had strong praise for the Simaudio's temporal cohesion, its ability to "[keep] low-level signals pure," and its facility with "detail...that most preamps smudge," but added that "in no way...did the 740P ever sound too analytical; its clarity didn't come at the sacrifice of musical warmth." JA summed up the Simaudio's time on the test bench: "The Moon Evolution 740P's measured performance is beyond reproach." (Vol.38 No.5 WWW)

TAD LABORATORIES C600: \$42,000

Part of TAD's Reference line, the C600 is a dual-mono, solid-state line preamplifier with a substantial external power supply. It measures 17.5" W by 5.9" H by 17.2" D, weighs almost 64 lbs, and has an attractive chassis of brushed anodized aluminum. It offers three unbalanced and three balanced inputs, two unbalanced and two balanced outputs, and two buffered Tape outputs. Each of the C600's inputs is associated with its own relay-controlled preamplifier, ladder resistor attenuator, and gain stage. The C600 combined airy highs, a somewhat lean midrange, and powerful bass for a sound that was exciting, resolute, and ruthlessly revealing, said MF. "TAD's C600 is a meticulously designed and exceptionally well-built high-tech wonder," he concluded. "Its construction and audio engineering are beyond reproach," JA added. (Vol.36 No.6 WWW)

VAC SIGNATURE SE: \$19,500 (LINE STAGE ONLY), \$26,000 (WITH PHONO)

In its basic form, the Signature SE (\$19,500) is a tubed line stage that offers a mix of balanced (XLR) and unbalanced (RCA) inputs and outputs, the latter addressed by custom-designed output transformers. Its optional phono stage (\$6500)—dual-triode tubes, MC step-up transformers, separate power-supply transformer, and all—fits alongside the line-level circuitry in the preamp's main enclosure. (A second, separate chassis is devoted to the line stage's power supply.) In his last review for *Stereophile*, our beloved friend BJR described the VAC Signature SE as nothing less than "the most significant audio product I've ever hooked up to my reference system. It was flawless." Noting, in his measurements, some frequency-dependent "poor overload margin" and "high intermodulation distortion" in the VAC's phono stage, JA recommended partnering the preamp only with phono cartridges of lower-than-average output. (Vol.38 No.6 WWW)

VTL TL5.5 SERIES II SIGNATURE: \$8000

VTL's most expensive all-tube preamplifier retains the basic circuit topology of the original TL-5.5 with a lower-gain, high-current 12AU7 tube circuit, a 12AT7 tube buffer, minimal negative feedback, and a low-impedance output stage. It uses a new, precision-regulated power supply and has a 117-step, chip-based differential volume control. There are two pairs of inputs that can be operated in either balanced or single-ended mode, as well as six additional single-ended inputs. Though it wasn't as resolving or detailed as the Nagra Jazz, the VTL produced delicate highs, a voluptuous midrange, and punchy bass, said BJR, adding "an extraordinary sense of lower bass extension and high level dynamic slam." "VTL's TL-5.5 Series II Signature is a nicely engineered preamplifier that offers no measured compromise resulting from its use of tubes," added JA. Optional phono stage adds \$2500. (Vol.36 No.6 WWW)

YPSILON PST-100 MK2: \$37,000 ★

Made in Greece, the PST-100 is a handsome tubed preamplifier housed in a thick, satin-finished aluminum chassis. It features transformer-based attenuation, 6CA4 tube rectification, choke supply filtering, a switchable pas-

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INTEGRATED AMPLIFIERS & RECEIVERS

TWO-CHANNEL POWER AMPLIFIERS

TWO-CHANNEL PREAMPLIFIERS

sive mode, and a zero-feedback active stage based on a carefully selected Siemens C3m pentode tube. Though differences between the PST-100's active and passive stages were small, MF preferred the passive stage for its purer, more transparent sound. Compared to the darTZeel NHB-18NS, the Ypsilon produced more vivid tonal colors and greater physicality. "For now," MF concluded, "the Ypsilon PST-100 is the most transparent and, therefore, the most perfect audio component I have ever heard—or not heard." Though XLR input and output jacks are provided, the circuitry is unbalanced only. Without a line stage, the completely passive PST-100 TA costs \$26,000. (Vol.34 No.7 WWW)

ZESTO AUDIO LETO: \$7500

As BJR put it, the word that best describes the technical design of the "drop-dead-gorgeous" Zesto Audio Leto line-level preamplifier is *simplicity*: its per-channel tube complement of one 12AX7 dual-triode and one 12AU7 dual-triode provides up to 12dB of gain—which the user can switch to 3dB, if the need arises to stay within the volume control's most accurate range. All switching is done with reed relays, and BJR described the stripped-down remote control as "the most minimalist I've ever encountered." In addition to single-ended operation, the Leto offers transformer-coupled, true-balanced inputs and outputs. The Zesto Leto was capable of great musical delicacy, BJR noted, and "it most impressed . . . with its ability to articulate transients." He was also "astounded by the Leto's wide and linear dynamic range," although, on the downside, "the Zesto seemed to run out of gas a bit in the loudest passages; in short, [its] dynamic range seemed to stretch only from *ppp* to *ff*." In his measurements, JA was impressed overall, noting in particular that "the Leto's distortion signature doesn't change with level, frequency, load impedance, or at different volume-control settings." 2015 "1.5" version adds a headphone amplifier. (Vol.37 No.4 WWW)

B**PARASOUND HALO P 7: \$2295 \$\$\$ ★**

Full-featured analog stereo preamp with six stereo inputs, balanced and unbalanced outputs, front-panel headphone and MP3 jacks, and an MM/MC phono preamp—See "Multichannel Components." Delightful sound but "falls asymptotically short of the delicacy of the Nagra and Sinaudio preamps I have used," says KR. (Vol.32 No.1 WWW)

PARASOUND HALO P 5: \$1095 \$\$\$

The 2.1-channel Parasound Halo P5—the "1." hints at the P5's three subwoofer outputs, which incorporate user-adjustable high- and low-pass filters—is a solid-state line-and-phono preamplifier equipped with a balance control, defeatable tone controls, an analog iPod input, electronic source switching, a headphone jack, and a built-in 24-bit/192kHz D/A converter with a USB input. AD observed: "On paper . . . the Parasound P5 seemed like an awful lot of product for the money; that impression was borne out in my system." He described the preamp as slightly dry sounding but with "enduringly good musical flow and momentum, and superb freedom from distortions of pitch or timing." While the P5's built-in DAC was pleasantly clear, AD suggested that it was no match for the more colorful, substantial Halide DAC HD; in his measurements, JA concurred, saying the P5's digital section is best "regarded as more of a convenience" feature, while praising the analog preamp's "excellent performance at an affordable price." (Vol.37 No.4 WWW)

Editor's Note: There are currently no Class C preamplifiers listed.

D**EMOTIVA CONTROL FREAK: \$49**

To the minimalist audiophile whose system combines a single source component with an amplifier that lacks a level control, the Emotiva Control Freak might seem a boon. The Control Freak even dispenses with the box: It is, as ST put it, "A set of interconnects with a volume control in the middle." Other than that, the only thing ST had to

say was, "I love the feel of the Emotiva." There you go. Balanced version costs \$59. (Vol.37 No.12)

SCHIIT AUDIO SYS: \$49

ST, to whom the concept of a simple and gainless preamp has great appeal—"Why do you need so much gain if all you're going to do is dial it back?"—was attracted to this latest piece from Schiit. The SYS provides two pairs of input jacks, a switch for choosing between them, a volume control, and one pair of output jacks. Compared with an \$8500 transformer-based passive preamp, the Schiit disappointed in its lack of ability to "expand dynamics and quiet background noise." But, said ST, "The Schiit SYS preamp introduced no crap of its own. No power-supply noise, no tube farts, no glare." His verdict: "You almost owe it to yourself" to try the Schiit SYS. (Vol.37 No.12)

K

NAD M12, Arcam C49.

DELETIONS

Luxman C-600f, mbl 6010 D Reference, Music First Audio Classic Magnetic V2, all not auditioned in a long time.

TWO-CHANNEL POWER AMPLIFIERS

Editor's Note: Because of the disparity between typical tube and solid-state "sounds," we have split Class A for separate power amplifiers into two subclasses. Nevertheless, even within each subclass, Class A amplifiers differ sufficiently in character that each will shine in an appropriate system. Careful auditioning with your own loudspeakers is therefore essential. Except where stated, output powers are not the specified powers but rather those we measured into an 8 ohm resistive load. All amplifiers are stereo models, except where designated.

A (SOLID-STATE)**ATC P1: \$3999**

No strangers to the making of solid-state amplifiers—ATC has, for decades, specialized in building self-powered speakers for the pro and domestic markets—the British firm now sells a 150Wpc standalone power amplifier. The P1 is said to offer wide bandwidth (2Hz–400kHz) and a high damping factor (400), plus true balanced inputs alongside its unbalanced RCA jacks. (ATC recommends the former for best performance.) After spending a number of weeks with the P1, JM concluded that "the P1 did not editorialize on the music; it just delivered it." Indeed, his time with the ATC P1 led JM to wonder if perhaps another recommendable amp was, by comparison, adding a bit of "zip" to the sound, "and that perhaps the ATC P1 was telling the story straight." JM concluded: "I am unaware of any other amplifier built from discrete components with this level of build quality, and from a firm with a record of accomplishment similar to ATC's, that offers so much excellent wattage at such a comparatively low price." (Vol.37 No.10 WWW)

AYRE ACOUSTICS MX-R TWENTY MONOBLOCK: \$29,500/PAIR

In the time since the introduction of their original MX-R monoblock, for which Wes Phillips had high praise in *Stereophile's* April 2007 issue, Ayre Acoustics discovered the suitability to high-performance domestic audio of the half-century-old "diamond" circuit configuration of bipolar transistors. An advanced version of that innovation, the Double Diamond output stage, along with Ayre's recently developed AyreLock voltage-regulator refinement, and a few other new refinements, have now been applied to Ayre's top-of-the-line power amplifier. The result is the MX-R Twenty, a 300Wpc flagship named in honor of Ayre's 20th anniversary. Describing the MX-R Twentys' performance in his system, JA opined that, no matter what he played, the MX-R Twentys "simply stepped out of the way of the music, letting it flow unimpeded." And bassist JA couldn't help being impressed by how well the MX-R Twen-

tys reproduced a sound he knows so well: "[Jaco Pastorius's] detuned low F and C were so well formed and so palpable that they rolled from the speakers and across the floor to me!" Reporting from his test bench, JA described the Twenty as "significantly quieter than its predecessor," and declared the Ayre "a true high-resolution amplifier." (Vol.38 No.8 WWW)

BRICASTI DESIGN M28 MONOBLOCK:**\$30,000/PAIR**

Made entirely in Bricasti's factory in Massachusetts, the solid-state M28 is a fully balanced, dual-differential design from its XLR input to its speaker outputs. Its specified 200Wpc into 8 ohms comes courtesy of two banks of 12 bipolar transistors each, and its CNC-machined case ensures that, in Bricasti's words, "each element mates to a purpose-built location within the chassis." MF described the M28 as "a powerful, beautifully built amplifier" and praised it as "faultlessly smooth and rich in the critical midrange," adding that "[e]ven a diaphragm tube lover would be impressed." But he found the M28 to be "more smooth and sweet than fast and tight," and suggested that its top end was "insufficiently fast and precise for my taste." Reporting from the lab, JA said: "Its measured performance reveals Bricasti's M28 to be a worthy stablemate to the company's superb-measuring and equally superb-sounding M1 D/A processor." For his Follow-Up, JA auditioned the Bricasti amps in his own system, and described the sonic balance achieved by the combination of Bricasti amps and KEF Blade Two loudspeakers as being "a little on the polite side." But he also found that the Gamut RS7 speakers "proved a synergistic match," the M28s producing "an enormous sweep of sound at the climaxes." His conclusion: "used in an empathetic system . . . [the M28s] will produce true reference-quality sound." (Vol.38 No.5 & 8 WWW)

CLASSÉ CA-M600 MONOBLOCK:**\$14,000/PAIR****CLASSÉ CT-M600 MONOBLOCK:****\$13,000/PAIR ★**

In a mundane-looking black box with a detachable rack-mount front panel that matches the styling of Classé's CT-SSP preamplifier-processor, the CT-M600 is rated to deliver 600W (700W at actual clipping) into 8 ohms. It employs Classé's Intelligent Cooling Tunnel, in which internal heatsinks are mated to a microcontroller to actively ensure a thermally stable environment. All the audio circuitry, including the 36 output devices, is carried on two six-layer boards, allowing signal paths to be very short and keeping the amplifier's noise floor very low. The CT-M600 was the "consummate chameleon," drawing the best from a wide variety of loudspeakers, providing enormous dynamic range, deathly quiet backgrounds, and intensely saturated colors. "They are the best-sounding amplifiers I have auditioned in my system [as of 2013]," said JA. Compared to the massive Musical Fidelity AMS100, the CT-M600 offered better upper-bass definition and slightly more upper-frequency energy, but lacked the AMS100's sweet, forgiving treble, said JA. The CA-M600 is essentially the same amplifier, housed in Classé's traditional Delta-series enclosure, with its brushed-aluminum front panel curved around to form the side panels. (Vol.34 Nos.3 & 9 WWW)

CONSTELLATION CENTAUR MONOBLOCK:**\$64,000/PAIR**

The 103-lb Performance Centaur Mono is rated to deliver 500W into 8 ohms, features minimalist industrial design by Alex Rasmussen, and offers conventional balanced and unbalanced inputs as well as a Direct XLR input for use with Constellation preamps. Utilizing Constellation's proprietary Balanced Bridge topology, each Centaur Mono includes a pair of carefully matched amplifiers, both using only N-channel MOSFETs. Though they lacked ultimate bass depth and definition, the Centaurs produced a fast, open, transparent sound that was ruthlessly revealing, but never unnaturally harsh or edgy, said MF. For best results, the Centaurs' open sound will require careful matching of associated gear, and especially careful choice of cables, he cautioned. "Constellation Audio's Performance Centaur Mono is a powerhouse of an amplifier capable of de-

livering very high power with very low distortion into 4 and 8 ohms," JA concluded. (Vol.36 No.11 WWW)

DAN D'AGOSTINO MOMENTUM MONOBLOCK:
\$55,000/PAIR

Dan D'Agostino's statement product, the 300W (450W at actual clipping into 8 ohms) Momentum has a compact chassis (12.5" W by 5" H by 21" D) machined from a single aluminum billet. A large, round power meter dominates the front panel, while thick copper side panels act as heatsinks. The low-feedback, fully complementary, balanced design uses 1% metal-film resistors and two dozen 69MHz output transistors in a direct-coupled, discrete, bipolar output circuit with a claimed frequency response of 20Hz–20kHz, f10.1dB. The Momentums produced a seamless overall sound, with slightly reserved highs, a tube-like midrange, and an authoritative bottom end, said MF. "With the darZeeL NHB-458, it's one of the two most satisfying power amplifiers I've ever heard," he concluded. "This is an amplifier that is as well engineered as it is beautiful to behold," said JA. Add \$5000 for black finish. (Vol.36 No.2 WWW)

DARTZEEL NHB-458 MONOBLOCK:
\$15,000 CHF/PAIR

Made in Geneva, Switzerland, the 450W (530W at actual clipping) NHB-458 measures 18" H by 11" W by 20" D, weighs 154 lbs, and has a deep-gold, brushed front panel and retro-industrial, red-anodized case. Tinted glass side panels allow magnetic fields to escape the chassis and reveal the amp's enormous cylindrical transformer. The large rear-panel heatsink has a cutout for connections that include RCA and XLR inputs, as well as a Zeel BNC 50 ohm input, for use with darZeeL's NHB-18NS preamplifier and Playback Designs' SACD player and DAC. It combined outstanding speed, precise high-frequency transients, and unlimited dynamic range with powerful bass and unsurpassed transparency, said MF. "The darZeeL NHB-458 is easily the finest power amplifier I have ever heard in my listening room," he concluded. At a price! (Vol.35 No.8 WWW)

KRELL SOLO 575 MONOBLOCK: \$22,500/PAIR
 See MF's review in this issue.

LAMM INDUSTRIES M1.2 REFERENCE MONOBLOCK: \$27,190/PAIR *

The 110W M1.2 with tube front end and MOSFET output stage, comprehensive short-circuit protection, and high/low impedance settings, offered "unflinching honesty in conveying the true nature of the music that passed through it," said PB. "Utterly continuous and coherent from top to bottom," the M1.2 combined resolution and transparency with harmonic completeness, timbral richness, and glow. JA concurs. Compared to the Classé CT-M600 and MBL 9007, the Lamm had a more robust, less delicate sound, but nevertheless impressed JA with its three-dimensional soundstaging and midrange richness. "This is a great amplifier," JA decided. "Highly recommended." (Vol.28 No.2, Vol.35 No.4, Vol.37 No.6 WWW)

LUXMAN M-700U: \$9999

Unlike the discontinued Luxman M-600A, a 30Wpc class-A amplifier whose sound JM described as "sweet," Luxman's recent M-700U is a 120Wpc class-A/B design. The M-700U employs Luxman's Only Distortion Negative Feedback (ODNF) circuit, whereby negative feedback is applied only in the presence of, you guessed it, distortion. For JM, the M-700U proved to be "an amp for all seasons," and while it wasn't, in his words, "out-and-out euphonic," it did allow pianos to sound "more rounded and continuous" than the Channel Islands Audio E-200S, itself another JM favorite. (Vol.38 No.6 WWW)

MBL 9011 REFERENCE MONOBLOCK:
\$106,000/PAIR *

The 440W (540W at actual clipping into 8 ohms) 9011 measures 19" W by 13" H by 34" D, weighs 223 lbs, is available in several high-gloss finishes with accents in chrome or gold plate, and can be used as a stereo amp or bridged monoblock. Though it lacked some speed and bass punch in absolute terms, the MBL produced a rich midrange and excelled in scale, atmosphere, ease of presentation, and sheer power, said MF. When used as a bridged monoblock, the 9011 must be driven by a balanced signal, cautioned

JA, who noted superb measured performance. (Vol.35 No.3 WWW)

MBL 9007 NOBLE LINE MONOBLOCK:
\$42,800/PAIR *

The 440W Reference 9007 can be used as either a balanced monoblock or a single-ended stereo amplifier and has provisions for biwiring and biamping. It uses mbl's Direct Push/Pull circuitry design and Isolated Gain Cell technology, and its gleaming black exterior is decorated by a large, gold mbl logo. Sacrificing bloom and suppleness for crystalline transparency and offering tightly focused imaging, shimmering highs, and well-damped bass, the 9007 was one of the most exciting and engaging amplifiers in MF's experience. His recommendation only concerns the 9007 used as monoblock pairs, however. JA was thrilled by the mbl's superb measured performance. Compared to the humongous Musical Fidelity AMS100, the mbl monoblocks were a little more forward in the low treble and offered more ultimate slam, but lacked the AMS100's sweet, forgiving treble, said JA. (Vol.29 No.9; Vol.34 No.9, Vol.37 No.6 WWW)

MBL CORONA C15: \$25,000/PAIR

Although it employs a custom-specified version of the popular Hypex class-D amplifier module, the Corona C15 monoblock, which offers 280W into 8 ohms, 520W into 4 ohms, is, according to its designer, a "Linear Analog Switching Amplifier," the overall design concept of which entails the use of a linear rather than switch-mode power supply—itsself built around a toroidal transformer with generous mu-metal shielding. (The latter is presumed to contribute to the amp's 48.5-lb weight.) Indeed, in his measurements, JA confirmed that "the C15's transfer function appears to remain relatively consistent with both frequency and output current"; also unusual for a class-D amp was the C15's admirable output-impedance behavior: JA discovered that its low-pass function into loads of 4 and 2 ohms was "very similar to its 8 ohm behavior." In his listening tests, JA found that the C15's "intrinsic character was all about control, especially the tight control of low frequencies"—a quality that served well the amp's pairing with the somewhat rich-sounding woofer alignment of the Vivid Giya G3 speaker, but less so the Joseph Audio Perspective, with which the MBL sounded clean but lean. Especially when combined with the classic Rogers LS3/5a, JA observed "superb imaging definition and stability" with the good-looking MBL amps. (Vol.37 No.6 WWW)

PARASOUND HALO JC 1 MONOBLOCK:

\$9000/PAIR \$\$\$ *

MF heard exactly what this high-power—400Wpc specified, 586W at clipping!—John Curl-designed amp's specs showed: "ultra-wide bandwidth, high-current capability, low, low noise, a high S/N ratio, and a fast slew rate, among many other indicators of outstanding amplifier performance...There was an honesty to the overall tonal and harmonic presentation that transcended technological stereotypes." MF found the overall sound to be powerful, refined, smooth, organized, dynamic, transparent, and rhythmically supple, if a little on the subtly warm and rich side of the sonic spectrum, but decided that this not at the expense of transient speed and resolution of detail. "Perhaps some listeners will find the JC 1 too refined and perhaps a tad polite, but I didn't." "Rocks for sure," says ST, adding that with the amp driving the Triangle Magellans, he found the "bass firmed up, the sound wasn't strained in any way, and there was an overall sense of ease. Dynamic ease. Listening ease. Just ease. Compared to the Halcros, the Parasound JC 1 is brought the soundstage forward. Tonally, the Parasounds were magnificent...with no trace of solid-state harshness. And the amps weren't even broken in." "The Parasound JC 1 is one of the finest high-powered solid-state amps I've heard," said ST. "Think of it as a 25W class-A amp that does 400W class-A/B when pushed." Matched with the JC 2 preamp, the JC 1s presented even greater holographic detail and transparency. The Parasound Halo JC 1 traded the Moscode 402Au's snappy, vivid tonality and larger soundstage for "quiet precision," clarity, and focus, said WP. The Halo JC 1 traded the Aesthetix Atlas's creamy midrange for greater bottom-end heft and top-end extension, said WP. Com-

pared to the Bryston 7B SST.2, the Parasound had deeper bass, tighter images, faster transients, and greater low-level resolution and microdynamic delicacy, said MF. A favorite of JA's, who was equally impressed by how the JC 1 performed on the test bench: "This is excellent measured performance. The Halo JC 1 is not only the best amplifier to come from Parasound, it ranks up there with the best high-end heavyweights," though WP felt that while the Halo JC 1 exhibited grace and delicacy compared with the much more expensive Luxman B-1000f, it lacked some impact, drive, resolution, and detail. *Stereophile's*—and Sam Tellig's—"Joint Amplification Component" for 2003. (Vol.26 Nos.2, 6, & 12, Vol.30 No.12, Vol.31 No.3, Vol.32 No.9, Vol.33 No.1, Vol.34 No.2 WWW)

PASS LABS XA60.5 MONOBLOCK: \$11,000/PAIR

Designed by Nelson Pass, the XA60.5 is rated to deliver 60W into 8 ohms (130W into 8 ohms at clipping) and uses Pass Labs' balanced, single-ended, class-A Supersymmetry circuit topology. Housed in the same case as the XA30.5 stereo amplifier, it has a gray-anodized aluminum front panel with a large, blue-illuminated meter that indicates the output stage's current draw. The interior is dominated by a large Pliotron toroidal power transformer flanked by two circuit boards, each carrying 10 pairs of complementary power MOSFETs. Though it lacked some bottom-end authority, the XA60.5 produced a natural, transparent overall sound, with especially beautiful mids and highs, said JA. "It is the best-sounding amplifier I have ever used," he concluded. (Vol.37 No.1 WWW)

PASS LABS XA30.5: \$5500 *

This solid-state stereo power amplifier from renowned engineer Nelson Pass is rated to deliver 30Wpc into 8 ohms, but actually delivered clipping-free peaks 6dB higher in power. Its strong yet elegant physical appearance is matched by a simple, symmetric internal design using Pass's Universal Gain Stage and 10 pairs of power MOSFETs along each side of the rugged chassis. Though it lacked the snap and energy of some larger, more powerful amplifiers, the XA30.5's "lifelike smoothness" and "effortless purity" brought forth the subtle microdynamic nuances of more intimate material. BD: "The XA30.5 is a superb-sounding amplifier. Absolutely, positively, and enthusiastically recommended!" Compared to his reference Pass Labs Aleph 3, the XA30.5 had a leaner midrange but provided a wider soundstage, greater resolution, and better dynamics, EL concluded. Compared to the tubed M-180 monoblock, the XA30.5 offered a slightly more forward sound that was "rounder, richer, less controlled but more sumptuous" overall, said EL. The XA30.5 traded the Pass INT-150's bass control and wide dynamics for greater purity and texture in the midrange, said EL. (Vol.32 Nos.5 & 8, Vol.33 No.1, Vol.34 No.1 WWW)

SILTECH SAGA: \$75,000

With their unabashedly expensive Structural Amplifier Gain Architecture (SAGA), cable specialists Siltech took a new approach to the two-box power amp: This is neither a pair of monoblocks nor a split between an amplifier and its power supply, but rather a split between a voltage amplifier and a current amplifier. The former, called V1, is a battery-powered tube amp that's switchable between triode and pentode modes, while the latter, P1, is a mains-powered solid-state amp. More unusual is the P1's Apollo Light Drive technology, in which bias current for the output transistors is produced by training high-intensity LEDs on a solar panel: Take that, orthodoxy! According to MF, in comparison with other top amps of his recent experience, "the SAGA sounded as if it had tightened the turnbuckles of tonality, space, and, especially, rhythm 'n' pace—the sound was positively exhilarating." But tightened turnbuckles have their price: "Soundstage depth was somewhat foreshortened, with images between the speakers that normally appear well behind the speaker plane presenting themselves closer to a line drawn between them." Still and all, MF concluded, "As soon as I pulled [the SAGA] from my system, I began to miss it." JA's measurements, spread over two sample sets, revealed "idiosyncratic" performance, prompting the recommendation that "this expensive amplifier must be auditioned with the prospective owner's own speakers. Stated price



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is for the V1 (voltage amp) plus P1 (current amp). C1 (preamp) costs \$37,500. Entire system costs \$112,500. (Vol.37 No.10 WWW)

SIMAUDIO MOON EVOLUTION 880M

MONOBLOCK: \$45,000/PAIR

Rated to deliver 800W (1050W at actual clipping), the flagship of Simaudio's Evolution line is a DC-coupled, fully balanced differential design. Its massive power supply is built on two 1.3kVA toroidal transformers and two banks of large capacitors. With a chassis of black-anodized aluminum and a front panel comprising elegantly curved extrusions of brushed aluminum, the 880M measures 18.75" W by 7.5" H by 16.5" D and weighs 92 lbs. Though it wasn't as tonally rich as the VTL S-400 Reference, the Simaudio was extremely well balanced, exhibiting an effortless precision and iron-fisted control that extended from top to bottom, said BD. "The 880M is an excellent design superbly executed, with a professionalism and attention to detail that promise consistently outstanding performance and long, trouble-free life," he concluded. Must be auditioned fully warmed-up, notes JA. (Vol.36 No.6 WWW)

SIMAUDIO MOON EVOLUTION 860A: \$15,000

The solid-state, balanced Moon Evolution 860A, capable of delivering 200Wpc into 8 ohms, is biased to operate in pure class-A up to 5W, beyond which the dual-mono 860A slides into class-A/B. Its DC-coupled output circuits employ 12 bipolar transistors per channel. Among the 860A's many performance characteristics that caught FK's attention, "most noticeable was the bass: subterranean, articulate, complex—and musical, not just a mush of bass notes." But FK hastened to add that neither that nor other individual sonic traits were the deal-sealers: "What most impressed me . . . was my sheer pleasure of listening to music." In his measurements, JA discovered that the 860A's power output was closer to 180Wpc than the specified 200Wpc; otherwise, he wrote, the amp "lives up to Simaudio's reputation for excellent audio engineering." (Vol.38 No.8 WWW)

THETA DIGITAL PROMETHEUS MONOBLOCK: \$12,000/PAIR

Joining the growing ranks of class-D amplifiers with perfectionist aspirations, the Theta Prometheus combines the Hypex Ncore NC1200 module developed by noted class-D specialist Bruno Putzeys with a linear power supply designed by Theta's own David Reich. (The latter—or at least its enormous toroidal transformer—accounts for the amp's 54.5-lb weight.) Specs include 500Wpc, less than 0.001% THD+N at 1W, and an output impedance said to be extremely low. According to LG, "The most striking things about the Prometheus's sound were its huge dynamic range and bass impact." He also noted that "The Prometheus projected a broad, detailed, involving, three-dimensional soundstage," and "the midrange response blossomed when my [Quad ESL-989] speakers were driven by the Thetas." LG's conclusion: "My last impression of the Prometheus was the same as my first: It's one of the best-sounding amplifiers I've heard in my listening room." Following the Theta's time on his test bench, JA wrote, "The measured performance of Theta Digital's Prometheus is superb, even for an amplifier with a class-D output stage." (Vol.38 No.3 WWW)

YPSILON AELIUS MONOBLOCK: \$36,000/PAIR

Made in Athens, Greece, the 200W Aelius monoblock power amp measures 16.6" W by 9" H by 16.6" D and weighs 99 lbs. Its audio circuit has only two gain stages and almost no passive components in the signal path. Its single-ended class-A input stage uses either a Siemens C3g or an Electro-Harmonix 6C45PiEH tube. With the C3g tubes in place, the Aeliuses produced a punchy, direct, and insistent sound with "hair-raising" transparency and three-dimensional imaging; with the 6C45PiEH tubes, the Aeliuses had a much warmer, darker, softer overall sound, said MF. On the test bench, the Aelius exhibited measured performance that was in many ways typical of a classic tube design, but with the ability to drive low impedances usually associated with solid-state designs. "Its sound quality will very much depend on the input tube fitted," said JA. (Vol.36 No.4 WWW)

A (TUBE)

AIR TIGHT ATM-1S: \$9500

Among the audio world's *artisanal* power amplifiers, only a few have more impressed AD than the Air Tight ATM-1S, the earliest version of which was made by Japan's A&M Limited way back in 1987. Today's ATM-1S uses two EL34 pentode tubes (configured as triodes) per side, for 36Wpc into 8 ohms. It also features solid-state rectification, dual-channel input-level controls, Hashimoto output transformers, a distinctly easy-to-use tube-biasing system, and a high level of build quality (including point-to-point wiring). AD found the ATM-1S to sound enjoyably warm and lush in his low-powered-amp-friendly system, yet with "an appropriate sense of [musical] momentum and drive." He praised the Air Tight for sounding "forceful and present when listened to at lower volumes," while noting that it remained "poised and free from gross colorations" when pushed. In his measurements, JA noted excellent squarewave response with short risetimes—but, on the downside, "drastically higher levels of second and higher harmonics in the left channel," a problem that may have been caused by a bad tube or damage in shipping. AD summed up: "The Air Tight ATM-1S is among the few power amps I'd care to live with." (Vol.37 No.11 WWW)

AUDIO RESEARCH REFERENCE 150: \$13,000 ★

The 150Wpc Reference 150 measures 19" W by 8.75" H by 19.5" D, weighs 75 lbs, offers output taps for 16, 8, and 4 ohm loads, and is available in silver or black. It uses eight matched pairs of KT120 output tubes and four 6H30 driver tubes; the output-stage coupling is a combination of the familiar ultralinear configuration and ARC's patented "partially cathode-coupled" topology. EL: "With its open soundstage, neutral tonal balance, finely textured musical presentation, wide dynamics, and supremely musical feel, the ARC Reference 150 connected me with my music better than almost every other amplifier I've heard." Compared to the Octave RE 290, the Ref 150 lacked some bass control but sounded significantly bigger, clearer, more colorful and, more natural, said EL. A JA favorite. (Vol.35 No.7 WWW; Vol.36 No.1)

AUDIO RESEARCH REFERENCE 75: \$9000

A half-power version of ARC's Reference 150, the 75Wpc Reference 75 uses four KT120 and two 6H30 tubes. Two front-panel VU meters double as adjustment meters for biasing each of the four KT120s. A relatively simple, straightforward circuit design enables short signal paths; high-quality output transformers offer 4 and 8 ohm taps, with a common ground. BJR noted lightning-fast transient articulation, superb detail resolution, and exceptional bass slam and authority. He bought the review sample. JA noted good measured performance, but advised against using the amp with speakers whose impedance drops significantly below the nominal value of the output-transformer tap. Also see JA's Nola review in Vol.37 No.10. (Vol.36 No.5 WWW)

CONRAD-JOHNSON CLASSIC 60 SE: \$5000 ★

The Classic 60SE uses four Tung-Sol KT120 tubes to deliver 60Wpc into 4 or 8 ohms. Upgrades over the standard Classic 60 include Teflon capacitors in the power supply and main reservoir, Vishay resistors at key points, and Cardas binding posts. With its handsome tube cage in place, the Classic 60SE measures 17.4" W by 6.6" H by 13.4" D and weighs 41 lbs. It combined exceptional dimensionality, pinpoint imaging, and excellent low-level resolution for an overall sound that was "the antithesis of mechanical or contrived," said ST. (Vol.35 No.4)

FI 421A: \$4575 ★

Designed and built by Don Garber in Brooklyn, New York, the FI 421A is a single-ended, capacitor-coupled, 4Wpc stereo amplifier with a single 421A power tube. It measures just 10" W by 8" H by 10.5" D, weighs 20 lbs, and uses high-quality parts throughout. The FI sounded "open, clear, compelling, and lovely," and had a knack for reproducing the human voice with outstanding presence and texture, said AD. Class A in special systems only, he cautions. Price increase since review due to new output transformers. One of AD's long-term references. (Vol.35 No.1 WWW)

LAMM ML-3 MONOBLOCK: \$139,490/PAIR

Rated to deliver 32W, Lamm's flagship design is a zero-global-feedback, class-A monoblock with a single-ended triode output stage and an outboard power supply. It uses one 12AX7, four 6N30P-DRs, and one direct-heated GM70 triode transmitter tube, and its assortment of premium internal components include: military-grade Dale metal-film resistors, Caddock power-film resistors, Cornell-Dubilier and United Chemi-Con electrolytic capacitors, and ElectroTube, Elcon, and Roederstein film caps. While the ML3 sounded "lusher and bloomier than life," it produced natural attacks and generous sustain, and had an airy, extended top end, said MF. "Cost and value for money aside, the Lamm Industries ML3 Signature is among a handful of the most pleasurable-sounding amplifiers I've ever heard," he concluded. JA noted good measured performance for an amplifier with a single-ended output stage. (Vol.36 No.9 WWW)

LAMM ML2.2 MONOBLOCK: \$37,290/PAIR

Like its predecessor, the ML2.1, the 18W ML2.2 is a single-ended triode monoblock power amplifier with a 6C33C indirectly heated power tube. Other tubes include two 6N6P, one 6AK5, one 5651, and one 12AX7. Refinements over the ML2.1 include a new input circuit, new power transformer, five power-supply filter chokes instead of two, revised printed-circuit boards, and upgrades of various parts. Measuring 16" W by 8.25" H by 20.375" D, weighing 81 lbs, and with 14 tubes total (all of which must be installed and adjusted by the user), the ML2.2s require careful setup. Though it lacked the Shindo Haut-Brion's knack for expressing musical force, the Lamm combined superb spatial and temporal performance with rich texture and tone color, said AD. "An extraordinary product," he concluded. (Vol.36 No.4 WWW)

LUXMAN MQ-88: \$8000 ★

The massively built, 40Wpc MQ-88 is a classic push-pull tetrode design based on the KT88 power tube. The amp is hand-wired, point-to-point, and all internal circuit components are suspended from its 15mm-thick top plate. While the MQ-88 lacked some bass control, it sounded much more powerful than the typical 40Wpc amplifier, producing surprising "oomph factor," said JM. Compared to Ayre's AX-7e, the Luxman lacked resolving power, bass extension, and soundstage clarity, but offered a "delectable midrange." (Vol.35 No.4 WWW)

MCINTOSH MC275: \$5500 \$\$\$ ★

The revised 75Wpc MC275, preserves the look of the original while adding modern innovations. Chimneys are used to cool the tubes by convection, and three circuit boards have been replaced by a single board on which are mounted all components, tube sockets, and power-supply parts. ST: "I heard all the dynamic quality, all that aliveness of the original, plus a level of transparency that brings the MC275 definitely into the 21st century." Sam bought the review sample. The fifth incarnation of the 75Wpc MC275, originally introduced in 1961, retains the first incarnation's classic appearance and its use of four KT88 power-output tubes, three 12AX7 input tubes, and four 12AT7 driver tubes. New are a stainless-steel chassis, balanced inputs, and gold-plated, five-way binding posts. While the MC275's two hefty transformers utilize the same "unity-coupled circuit" invented by McIntosh in 1947, the copper wiring is now insulated in a more durable synthetic material. Though dynamic expression was restricted and bass notes were "a bit muddy" in dense musical passages, the MC275 produced "stunning" soundstage depth and "spooky" intertransient silences, said FK. Meanwhile, the MC275's superb signal/noise ratios led JA to conclude that "Good audio engineering is timeless." Compared to its predecessor, the Limited Edition version of McIntosh's MC275 (\$6500) has beefier binding posts, a more conveniently positioned power switch, and a gold-plated rather than stainless-steel chassis. In addition, a new output-transformer winding process has resulted in wider bandwidth, increased damping factor, and improved linearity. RD noted an ideal top-to-bottom tonal balance and an impressive sense of rhythmic drive, concluding, "The MC275LE is simply a wonderful-sounding amplifier, able to bring out the best from a wide range of loudspeakers."



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MIYAJIMA LABS MODEL 2010 OTL: \$9950

Built into "some of the loveliest steel casework" AD has ever seen, the Model 2010 from Miyajima Laboratory is a stereo OTL amplifier that uses a total of eight 6080WC dual-triode tubes to produce 7Wpc. The fixed-bias 2010 also uses two 12AX7 dual-triodes, two 12AU7 dual-triodes, solid-state rectifiers, and a host of vintage and vintage-style parts, including 18 NOS Black Cat capacitors. Used as a stereo amp, the 2010 impressed AD by sounding "distinctly open and transparent" while lacking "nothing in the way of color or texture." Driving AD's DeVore Orangerutan O/96 speakers, the 2010 surpassed the similarly priced and powered Shindo Cortese in top-end sparkle while giving up nothing in terms of "superb touch and force." Adding a second 2010 and strapping the amps for mono—resulting in 16Wpc—delivered what AD described as some of the best sound he has had in his home: "The monoblock experience seems to be the way the Miyajima 2010 was meant to be heard—and I loved it." Full Class A status refers to the use of two 2010s. AD suggests that, even at nearly \$20,000 for a stereo pair, the Miyajima represents very good value. (Vol.37 No.7 WWW)

MUSIC REFERENCE RM-200 MK.II: \$5500 *

Made in the US, the 100Wpc RM-200 Mk.II has the same basic physical and electrical architecture as the original, but uses better output transformers, adds a capacitor-forming function to extend tube life, and has a revised power supply. The fully balanced design features a high-power, bipolar, solid-state input stage and tubed driver and output stages. It uses two matched pairs of KT88 (standard) or 6550 (optional) output tubes, and a pair of 6BQ7 drivers. Though it lacked the slam and bass authority of more powerful solid-state amps, the RM-200 Mk.II produced airy highs, well-defined bass, and a lush midrange. "When the RM-200 Mk.II was in my system, I wanted for nothing," said MF. JA noted "superb measured performance for a tubed design." Hand-wound output transformers, add \$1000; tube bias balance control, add \$800. (Vol.34 No.12 WWW)

OCTAVE AUDIO RE 290: \$8500

Made in Germany, the beautifully built, 75Wpc RE 290 is a push-pull design with class-A/B output stage and adjustable bias for each tube. It uses KT88 or KT120 power tubes, provides a single set of binding posts optimized for a 4 ohm load, and has a switch-activated power-saving mode. The RE 290's well-balanced sound was marked by tight bass, clean mids and highs, and excellent dynamic range, said EL. JA noted impressive measured performance. Compared to the Audio Research Ref 150, the Octave had better-controlled bass but lacked soundstage size, transparency, and tonal color, said EL. The optional Black Box (\$1200) and Super Black Box (\$3500) hook up to the RE 290 via an umbilical cord and respectively increase the capacitance four- or tenfold. (Vol.36 No.1 WWW)

PRIMALUNA DIALOGUE PREMIUM: \$3199

Rated to deliver 25Wpc in Triode mode or 42Wpc in Ultralinear, the extremely versatile Dialogue Premium is a push-pull design that uses six 12AU7 and four EL34, KT88, or KT120 power tubes. Like other Primaluna models, it offers: an LED-based Bad Tube Indicator system for the output tubes; a Power Transformer Protection circuit; an Output Transformer Protection circuit; an AC Offset Killer circuit intended to eliminate hum; and an Adaptive Auto-bias circuit. With every recording AD played, the Dialogue Premium exhibited an open, clear, and dramatic overall sound, with good tonal balance, realistically weighty bass, and remarkable spatial depth. "A very strongly recommended amplifier and a hell of a good value," AD concluded. Due to the amp's high output impedance and its rising distortion when the load impedance drops below the nominal value of the output-transformer tap, careful matching with the user's loudspeakers is mandatory, cautioned JA. (Vol.37 No.2 WWW)

ROGUE AUDIO M-180 MONOBLOCK: \$5995/PAIR *

Built in the US, the rugged Rogue M-180 delivers 180W in ultralinear mode, and uses four Electro-Harmonix KT90

output tubes. Upgrades over the earlier M-150 include: increased power-supply storage; PRP resistors; Cardas binding posts, input wiring, and RCA jacks; improved input circuitry; HexFred high-speed diodes for the bias supply; and upgraded small-signal tubes. EL was most impressed by the Rogue's ability to maintain articulation and propulsion while providing bass extension and weight. Compared to the Pass Labs XA30.5, the Rogue offered greater low-bass control and had a drier tonal balance. "A great value," sums up EL. See also EL's Rogue Atlas Magnum review in Vol.35 No.4. (Vol.33 No.1 WWW)

SHINDO D'YQUEM MONOBLOCK: \$24,995/PAIR

Shindo's newest mono amp produces up to 18W from a parallel pair of Russian-made Genelex 300B directly heated triode tubes, operated in single-ended, pure class-A mode. Like all Shindo designs, the D'Yquem is made from a careful mix of modern and vintage parts and has beautiful steel casework finished on all surfaces in the company's trademark shade of green. While the D'Yquem shared with other Shindo models an excellent ability to portray music's natural color, texture, impact, and momentum, it added an especially clean and colorful low end, said Art. (Vol.37 No.2 WWW)

SHINDO CORTESE: \$10,995 *

Like a sax player who can't make himself perform the same solo twice, Ken Shindo brought a certain artistic restlessness to the design of his hand-made tube amplifiers; the 10Wpc Shindo Cortese—the least expensive of his single-ended amplifiers and the only one built on a stereo chassis—has now been recast, offering the same essence but with slightly different phrasing. The Cortese's input circuit now uses two 6AW8A pentode/triode tubes per channel instead of one, its bias-supply circuit is laid-out somewhat differently, and the Sprague Black Beauty coupling caps have given way to Orange Drops; Allen-Bradley carbon-comp resistors, Siemens F2a indirectly heated output tetrodes, a ginormous Denki power transformer, and Shindo-designed Lundahl output transformers, the single secondaries of which are tailored to high-impedance loads, remain. The sound is punchy and very vivid, with exceptional drive and a bit less goodness than its immediate predecessor, says AD, who found it a particularly good match with the DeVore O/96 loudspeaker. (Vol.30 No.7 WWW)

SHINDO HAUT-BRION: \$10,995 *

Like earlier models, the latest Haut-Brion uses two matched pairs of the rare 6L6GAY pentode tube to deliver 20Wpc. The output section is a fixed-bias design, with a regulated bias supply and individual adjustment pots for each of the four output tubes, while the output transformer is a C-core Lundahl model made exclusively for Shindo. Unlike earlier models, the new Haut-Brion has three 6AW8A triode/pentode tubes per channel, uses a pair of Alps 250k ohm potentiometers, and forgoes global feedback. Though it lacked some low-frequency tightness, the new Haut-Brion created an enormous soundstage and showed impressive force. "The amp was the pizzicato king," said AD. (Vol.35 No.2 WWW)

THÖRESS 300B MONOBLOCK \$12,995/PAIR

The single-ended, feedback-free, hand-wired Thöress 300B mono power amplifier, made in Aachen, Germany, delivers 8W into 16 ohms. Its unique input section is designed around a pair of new-old stock Telefunken EL803S pentode tubes used as triodes, and its fixed-bias output stage is set at the factory: Apart from its power switch, the 300B's only user control is an anti-hum pot for its DC-heated output tube. The Thöress 300B, whose build quality impressed AD as "masterful," delivered "an exceptionally good sense of touch" in his SET-friendly system. It also "distinguished itself as a 300B-tubed amplifier with a little more treble extension than usual," and earned praise as "a lively, colorful, tactile, well-textured, unambiguously musical amp." Writing from his test bench, JA declared that, "Overall, the Thöress 300B monoblock measures well for a SET amp." Mr. D. concluded: "Highly recommended for anyone who has both the means and a sympathetic playback system." (Vol.38 No.4 WWW)

VTL SIEGFRIED SERIES II REFERENCE:

\$65,000/PAIR

VTL's Siegfried Series II Reference weighs an abdominal-wall-challenging 200 lbs and uses a dozen 6550 beam tetrode tubes to produce 330W in triode mode or 650W in tetrode mode. High-tech touches abound: A micro-processor delays and ramps up the output section's B+ rail on power-up and enables (reasonably) fast switching between triode and tetrode modes. And rather than use an output transformer with multiple secondaries—an approach that designer Luke Manley considers a sound-sapping compromise—the Siegfried Series II Reference has a tranny optimized for a 5-ohm load, plus a four-setting feedback control to adjust the damping factor as needed. In MF's system, where tetrode was the preferred mode (with damping factor set to Medium, and with occasional forays into triode), the VTL sounded three-dimensional, with "slam not in spades, but in dump trucks full!" MF reveled in the VTLs' midrange *creaminess*, while acknowledging the slightly greater transparency of the darTZeel NHB-458 monoblocks—and noted that the Siegfried II Reference was "as neutral and uncolored as any tube amp I've listened to." (Vol.37 No.5 WWW)

VTL MB-450 SERIES III SIGNATURE**MONOBLOCK: \$20,000/PAIR ***

Rated to deliver 425W (tetrode) or 225W (triode) into a 5 ohm load, the MB-450 III uses eight 6550 output tubes, a 12AT7 input tube, and a 12BH7 driver. Revisions to the Series II include a redesigned, fully balanced differential input stage, a lower-impedance output stage, premium Mundorf capacitors, and a shorter, faster, fully balanced negative-feedback loop. While the VTL sounded soft and "tubey" in triode mode, its tetrode performance was marked by an expansive top end, unusually fast attacks, clean decays, and well-controlled bass. "A significant evolutionary advance" over its predecessor, said MF. Because it provides lower distortion into higher impedances, the MB-450 III will sound best with higher-impedance speakers, JA advised. (Vol.34 No.4 WWW)

B**ALLNIC A-5000 DHT MONOBLOCK:**

\$19,900/PAIR *

Designed and made in South Korea by Kang Su Park, the Allnic A-5000 DHT, a 10Wpc single-ended monoblock, has three gain stages and an unusual combination of tubes: one Marconi CV1673, one 3A/110B, an Electro-Harmonix 300B, and a 5U4G full-wave rectifier. Construction quality was first-rate, with exceptionally clean solder joints and a solid, attractive case of aluminum alloy. Compared to AD's Shindo Corton-Charlemagne monoblocks, the Allnics had a slightly dark timbral balance with soft highs and short decays, but offered superb scale, drama, and impact. "Distinctive sounding and consistently musical," sums up AD. Along with the second-order distortion typical of single-ended designs, JA's measurements found an impressively wide frequency response, excellent squarewave reproduction, and low output impedances. Almost Class A in some respects. (Vol.35 No.6 WWW)

ANTHEM STATEMENT M1 MONOBLOCK:

\$6998/PAIR

Despite its relatively slim proportions (19.25" W by 2.25" H by 18.75" D; 20 lbs), the class-D Statement M1 is rated to deliver a whopping 1000W into 8 ohms. An internal heat-pipe cooling system allows multiple M1s to be stacked without the need for cooling fans or heatsink fins. The tidy rear panel holds balanced and single-ended inputs, a balanced-output gain switch, various trigger options, and a single pair of output terminals. The M1's detailed, extended highs were offset by its gritty, congested bass, which unnaturally colored almost every recording KR played. While the Anthem is extraordinarily powerful for its size, JA was very suspicious of the high level of ultrasonic noise in its output. "This will make the Anthem Statement M1's sound quality very system dependent," he cautioned. Be sure to audition with your own components and cables. (Vol.35 No.12 WWW)

CHANNEL ISLANDS AUDIO E-200S: \$2500 \$\$\$

California-based Channel Islands Audio, aka CIAudio, manufactures a variety of solid-state electronics, the E-200S being at the top of their line of stereo power am-

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1/R

2/L

Ayre

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I bet it uses op-amps though... Nope, It's a fully discrete design. And staying true to the music, it doesn't use any feedback either.

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Yeah, but it's only USB, right? Actually it has optical and USB inputs, allowing you to connect both your computer and another A/V source.

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Sounds like I should take a listen... Cool, let's go!

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LOUDSPEAKER SYSTEMS

plifiers. This class-D amp offers single-ended (RCA) and balanced (XLR) inputs, its differential input stage driving a set of Bruno Putzeys's well-regarded Hypex modules that produce 200Wpc into 8 ohms. JM described the sound of the E•200S as "coherent from bottom to top," adding that the CIAudio amp had "high resolution, authoritative bass control, and, yes, tonal neutrality in spades. It also projected a very large soundstage with a very quiet background." JM suggests that the E•200S deserves our \$\$\$ rating for very high value. (Vol.38 No.6 WWW)

LINDELL AMPX: \$1595 \$\$\$

Made in Sweden, the 20Wpc AMPX is a single-ended, dual-mono, class-A power amplifier with balanced XLR inputs. Designed primarily for pro-audio applications, the AMPX measures 18.8" W by 3.5" H by 17.4" D, and its faceplate, machined for rack mounting, is dominated by two large, blue power meters, calibrated to show watts into 8 ohms. Driving Opera's Callas loudspeakers, the AMPX was lively, detailed, and "unfalsifyingly musical, sounding both powerful and revealing," said JM. "A great amp and an amazing bargain," he concluded. As long as it isn't used to drive loudspeakers with impedances that drop significantly below 4 ohms, the Lindell should perform well, concluded JA. (Vol.36 No.12, Vol.37 No.1 WWW)

RAVEN AUDIO SPIRIT MK.2 MONOBLOCK:**\$13,990/PAIR**

Designed in Korea by S.E. Han and built in Texas by tube enthusiast Dave Thomson, the Spirit Mk.2 is a hand-wired mono amplifier that uses a push-pull pair of 300B direct-heated triode tubes to produce 26Wpc. The Spirit Mk.2 is tube-rectified, thanks to a pair of 5AR4 diode tubes; they and all six of the amp's small-signal tubes are new-old stock (NOS) items from Thomson's collection. In his own flea-watt-friendly system, AD found the Ravens comfortable with high playback levels, at which they "maintained their poise and clarity," and praised the amps' "flow and general clarity of rhythmic purpose." AD's verdict: "I believe that this Raven deserves more than a second look and listen." (Vol.38 No.5 WWW)

ROGUE ATLAS MAGNUM: \$1995 ★

Magnum upgrades over the basic Atlas (reviewed by Fred Kaplan in March 2007), include larger, quieter power supplies; polypropylene bypass capacitors; Dale-Vishay resistors in critical spots; sturdier binding posts; gold tube sockets; and the option of KT90 or KT120 output tubes, to increase the specified power rating to 90 or 120Wpc, respectively. EL preferred the fuller, more extended sound of the KT120 output tubes, and appreciated the Atlas Magnum's well-balanced character: "This amplifier had enough dynamic power, enough timbral accuracy, enough soundstage illusion, enough resolution, and enough musicality to turn off the analytical part of my brain and let me simply listen to music." JA was disappointed with the Rogue's lack of high-frequency linearity. Stock Atlas models can be upgraded to Magnum status for \$650. (Original, Vol.30 No.3 WWW; Magnum, Vol.35 No.4 WWW)

SOPHIA ELECTRIC 91-01 300B MONOBLOCK:**\$4999/PAIR**

The 9W (3W at 1% THD) Sophia Electric 91-01 300B is a single-ended power amplifier designed around the 300B directly heated triode tube, operated without negative feedback. The input stage is capacitor-coupled to the signal grid of one of Sophia's own Princess Mesh Plate 300B tubes, and both the mains and output transformers are designed and made in-house. Inside, the Sophia exhibited haphazardly routed point-to-point wiring, some sloppy solder joints, and under-insulated capacitor leads. Though its overall sound was slightly dark and lacked some top-end sparkle and mid-treble openness, the Sophia provided decent color, very good texture, and acceptable senses of touch and force, said AD. JA was concerned about some idiosyncratic aspects of the design. (Vol.36 No.12, Vol.37 No.1 WWW)

Editor's Note: There are no amplifiers listed in Class C and D.



Arcam P49, Benchmark AHB-2, Pass Labs XA60.8, Shindo

INTEGRATED AMPLIFIERS & RECEIVERS

Corton-Charlemagne, NAD M22.

DELETIONS

Soulution 710 discontinued; Musical Fidelity M6PRX not auditioned in a long time.

INTEGRATED AMPLIFIERS & RECEIVERS

**AYRE ACOUSTICS AX-5 TWENTY: \$12,950**

In 2013, AD described the original Ayre AX-5—a \$9950 integrated amplifier built around a recently rediscovered configuration of bipolar transistors known as the "diamond" circuit—as "one of the three best, most musical, most human-sounding solid-state amps I've ever heard." Then, in 2015, Ayre debuted a new version, the AX-5 Twenty—a nod to the company's 20th anniversary—promising even better sound. The AX-5 Twenty is built into the same foursquare aluminum case as the AX-5, and is controlled by the same performance-optimizing Variable Gain Transconductance (VGT) volume-control system—but the Twenty incorporates Ayre's new Double Diamond output, claimed to run cooler (which AD verified) and to offer slightly more power (though the 125Wpc rating remains). This time out, AD got a little pissy about Ayre's user manual and the amp's "pointlessly complex" setup procedure, but was otherwise smitten: He delighted in a sound that was "slightly sweeter" than the original AX-5's. Stringed instruments, he said, were "reproduced with color, body, scale, melodic and rhythmic drive, and believable spatial presence." AD concluded that "the AX-5 Twenty is arguably . . . more compelling than its predecessor." Although he raised an eyebrow at the 30% (\$3000) price increase over the original, AD commended Ayre for allowing AX-5 owners to have their amps upgraded to Twenty status for the same price. (Vol.38 No.8 WWW)

AYRE ACOUSTICS AX-7E: \$3950 ★

The success of this 60Wpc, solid-state, two-channel, fully balanced, integrated amplifier depended on the associated sources. Used from balanced output to balanced input, "It was brilliant. Amazing. Stirring, even," said AD. However, used as an unbalanced amp, "The AX-7 still sounded good, but its musical performance lacked momentum and, ultimately, excitement." Overall, the Ayre was "colorful, clear, well-textured, and spatially convincing." It seemed sensitive to the type and length of speaker cable AD used, and seemed more sensitive to AC power quality than average. "I strongly recommend the Ayre AX-7 for use [only] in an all-balanced system." The '7e's power supply now includes greater filtering of the AC mains, increased peak current delivery, and filtering of the rectifier switching noise. In addition, the AX-7e's gain stages now use two-stage voltage regulators in place of the earlier version's single-stage regulators. The sound now combined classic Brit-style pacing and tunefulness with near-SET levels of presence and a fine sense of musical flow, a combination that allowed AD to become emotionally involved in the music. "The AX-7e is the best integrated I've ever heard," endorsed WP. "One heck of an involving amplifier," he summed up. Compared to the Luxman MQ-88 power amplifier, the Ayre offered greater bass extension and soundstage control but lacked the Luxman's beguiling midrange, said JM. Original AX-7s can be fully upgraded for \$250–\$350, depending on the age of the unit. (Vol.26 No.10 AX-7; Vol.29 No.1, Vol.31 No.3, AX-7e WWW; see also "The Fifth Element" in Vol.34 No.2 and Vol.35 No.4 WWW)

BEL CANTO BLACK AMPLIFICATION SYSTEM: \$50,000

Tempting though it is to classify the Bel Canto Black as an integrated amplifier, it is more than that. This three-box system comprises a sort-of preamplifier, the ASC1 (\$20,000), and two sort-of monoblock amplifiers, the MPS1s (\$15,000 each), the latter operating in class-D for 300Wpc into 8 ohms or 1200Wpc into 2 ohms. The Ethernet-ready ASC1, which can be controlled with an iPhone/Android Bluetooth app, provides a brace of digital inputs

TWO-CHANNEL POWER AMPLIFIERS

and, via ST-optical connections, feeds the MPS1 amps digital signals at their native resolutions up to 24-bit/192kHz and DSD64. The ASC1's single pair of analog inputs (RCA) address an internal 24/192 ADC: Everything that goes through the ASC1 does so as a digital stream, eligible for tailoring by a variety of user-selectable digital filters. (The MPS1 amplifiers also offer analog inputs.) In his listening tests, MF found the Bel Canto Black to offer "the most compelling digital sound yet," and to embody the best-yet implementation of class-D technology: "here, finally, is a class-D product that, though sounding definitely different from the older technologies, makes a strong case for equality." Writing from his test bench, JA declared that he was "very impressed by the Bel Canto Black, especially with its behavior as a D/A converter that is effectively capable of driving loudspeakers." (Vol.38 Nos.7 & 10 WWW)

BEL CANTO C7R: \$2595 \$\$\$

Made in the US, the versatile C7R is a 60Wpc solid-state FM receiver with four S/PDIF digital inputs (two coaxial, two TosLink), two pairs of analog inputs (one phono, one line), one pair of line-level analog outputs, a front-panel headphone jack, and a built-in DAC with USB input capable of handling resolutions up to 24-bit/96kHz. Though it lacked some midrange clarity and high-frequency smoothness, the C7R sounded clear, immediate, and powerful, with excellent dynamics and tight, tuneful bass, said EL. "I loved the Bel Canto C7R. I recommend it to anyone who wants simplicity and great sound," he concluded. "Overall, the C7R is a well-designed piece of hardware," said JA. (Vol.36 No.3 WWW)

JADIS I-35: \$7495

Made in France, the beautiful I-35 is a tubed, integrated amplifier with five line-level inputs. Though rated to deliver 35Wpc into 1–16 ohms, the I-35 produced just 17W into 8 ohms at 1% THD. It uses five small-signal tubes (three 12AU7s and a pair of 12AX7s) and two pairs of KT120 output tubes run in autobias mode in an Ultralinear circuit, with plates and screen grids for each channel tied to the split-coil primaries of transformers expertly designed and made in-house. Build quality and cosmetics were outstanding, inside and out. Though it lacked the fullness and richness of Art's Shindo separates, the Jadis produced a natural and engaging overall sound, with an excellent sense of momentum and a very good sense of the spatial relationships between different sounds in a stereo recording, said AD. "This is a damn good amp for getting to the essence of music," he concluded. (Vol.37 No.1 WWW)

KONDO OVERTURE: \$26,900 ★

Made in Japan, the 32Wpc Overture uses a class-A, Ultralinear output circuit with minimal (3dB) global feedback, executed with split-primary output transformers custom-wound by Tango. It uses two Electro-Harmonix EL34 output pentodes, one 6072, and one 12BH7 per channel. Build quality was exceptional and marked by silver wiring, handmade capacitors, bespoke resistors, a solid-copper ground plane, and a tuned chassis made from a combination of steel, brass, and aluminum. The Overture has no balance control, remote control, mono switch, headphone amplifier, or phono stage, but does provide four pairs of line-level inputs and a choice of 4- or 8-ohm output sockets. Though it was slightly lean and not quite as colorful as AD's Shindo separates, the Overture produced a natural, compelling overall sound with a well-extended treble and exceptional senses of drive and scale. (Vol.36 No.11 WWW)

LFD NCSE: \$6795

A bigger and more powerful version of LFD's excellent Mk.IV LE, the NCSE Mk.II measures 17.2" W by 3.25" H by 15.7" D, and is rated to deliver 70Wpc. The basic circuit remains the same, with a pair of MOSFET output transformers for each channel. The NCSE Mk.II retained the smaller model's speed, transparency, harmonic accuracy, and illuminated from-within quality, but added improved bass and dynamics, said ST. "If you like the Mk.IV LE but feel you're running out of power, the NCSE Mk.II would be the better choice, particularly if you're driving bigger speakers in a bigger room," he advised. (Vol.36 No.11)

LFD LE V: \$4495

Dr. Richard Bews, proprietor of England's LFD electronics,

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has once again upgraded his and Dr. Malcolm O. Hawksford's original integrated amplifier, the 65Wpc LE (née Mistral): a perennial ST favorite, owing to its complete lack of convenience or "luxury" features that degrade sound and add expense. To those ends, all iterations of LFD's solid-state amp have lacked balance and tone controls, headphone jacks, extra sets of speaker outputs, digital displays, and, especially, remote controls. The LE, which Dr. Bews builds in small batches, provides five line-level inputs (but no phono section), and is made with only the highest-quality parts, some vintage (NOS), some custom-made. According to ST, the new LE V—whose improvements all seem to arise from a combination of sturdier casework and more refined parts—"is a showstopper. I mean that literally. I didn't want to write; I wanted to listen." Compared to the LE IV, which ST owns and loves, the LE V represents "a substantial improvement. Everything just fit into place: harmonics, timing, resolution." Quoth he: "Buy your LFD LE V today." (Vol.37 No.7)

LINE MAGNETIC LM-518IA: \$4450

See HR's review in this issue.

PASS LABS INT-150: \$7150 ★

The push-pull, class-A/B INT-150 is rated to deliver 150Wpc (191Wpc at clipping), and has a high-quality volume control and five inputs: two XLR/RCA and three RCA-only. It uses Pass's Super-Symmetry Circuit, previously featured in all X-series models, to naturally eliminate distortions from the audio signal. Though it produced a slightly forward midrange and top end, the INT-150 combined wide dynamic range with great rhythmic drive, a broad soundstage, and tight, tuneful bass, said EL, who recommended High Class B. Measured performance was excellent in most respects, said JA, who feels low Class A is the appropriate rating. (Vol.34 No.1 WWW)

PRIMALUNA DIALOGUE PREMIUM HP: \$4399

PrimaLuna's DiaLogue Premium HP employs a total of eight power tubes—EL34s are standard, although the user can substitute a variety of other power pentodes—to produce 40Wpc in triode mode or 70Wpc in Ultra-linear mode. (On-the-fly switching between modes can be performed with the DiaLogue Premium HP's remote handset.) Additional features include a newly designed, six-tube front end; the "highest-end" implementation yet of PrimaLuna's Adaptive AutoBias circuit; and an all-tube headphone amp. RD, a fan of the company's earlier ProLogue Premium, found that the new amp provided higher power with no loss of finesse, and declared, "PrimaLuna had taken a major step forward in amplifier performance." JA's measurements indicated that "PrimaLuna's output transformers are of excellent quality." Distortion wasn't the lowest JA has seen, but, "fortunately, the distortion is heavily second-harmonic in nature in both modes, even at low frequencies." He concluded that, "overall, the PrimaLuna DiaLogue Premium HP measures well for a design using push-pull pairs of EL34 tubes." RD summed up: "\$4199 for an integrated amp of the DiaLogue Premium HP's level of performance represents excellent value." (Vol.37 No.12 WWW)

PRIMALUNA DIALOGUE PREMIUM: \$3399

PrimaLuna's top-of-the-line integrated amplifier is rated to deliver 36Wpc with its stock EL34 output tubes or 43Wpc with optional KT120s. It uses PrimaLuna's Adaptive AutoBias feature for easy swapping of output tubes, and has a bad-tube indicator, power-transformer protection, and output-transformer protection circuitry. The DiaLogue Premium was extremely quiet and sounded bigger than its power rating suggested, with a rich midrange and an excellent sense of timing, said ST. "The DiaLogue Premium will be a dream come true for anyone who has a closetful of output tubes," he concluded. (Vol.36 No.6)

PRIMALUNA PROLOGUE PREMIUM: \$3399 ★

Designed in Holland and made in China, the solidly built ProLogue Premium is rated to deliver 35Wpc with EL34 tubes or 40Wpc with KT88s. It has a heavy-gauge, ventilated case with a lustrous five-coat finish, features point-to-point wiring, and offers five pairs of RCA input jacks, a Home Theater bypass, and connections for speaker loads of 4 and 8 ohms. Though it lacked the three-dimensional imaging, detailed highs, and extended bass of more ex-

pensive amplifiers, the ProLogue Premium produced a natural, inviting midrange and performed well with a wide variety of speakers. "The PrimaLuna ProLogue Premium offers outstanding sound quality at a very reasonable price," said RD. JA noted respectable measured performance for a classic tube design. (Vol.35 No.6 WWW)

SIMAUDIO MOON EVOLUTION 700I: \$14,000 ★

Robustly built of thick, ultralight aluminum, the 700I is a fully differential dual-mono design rated to deliver 175Wpc (190Wpc at actual clipping), running in class-A up to 5W and in class-A/B thereafter. Its output stages are powered by six bipolar transistors per channel for a wide bandwidth and low noise floor, while its "zero global feedback" design works to boost the speed of the signal response and eliminate intermodulation distortion. Though it couldn't match the Krell FBI's transient speed or deep-bass extension, the 700I had a full-blooded, dynamic, seamless sound marked by vivid tonal colors, harmonic integrity, and a strong sense of rhythm. With the 700I, "I found myself drawn deeper into the music," said FK. (Vol.34 No.3 WWW; see also FK's Moon Evolution 860A review in Vol.38 No.8 WWW)

T+A POWER PLANT BALANCED: \$3300 ★

The 140Wpc Power Plant looks almost identical to T+A's Music Player, and the two comprise a fully functional audio system in a single stack. Connection via a supplied RJ-12 cable coordinates the functions of the MP and PP, and allows the pair to be operated by a single remote. The PP's switch-mode output stages were developed in-house, and combine MOSFET transistors with high-energy driver modules. JI noted a "dynamic-sounding amplifier section that exhibited ample and well-controlled bass along with a smooth, detailed top end." Surprisingly robust and detailed sounding amp for such a small cool-running package, he concludes. (Vol.32 No.8, Vol.35 No.9 WWW)

UNISON RESEARCH S6: \$5600

Each channel of the Italian-made S6 uses three EL34 power pentode tubes in a class-A, single-ended, triode-parallel configuration to deliver 35Wpc into 8 ohms. Its distinctive chassis is longitudinally divided into three portions: a central raised center that houses the iron-core transformers is flanked by identical lower sections that hold the tube sockets, bias meters, and bias-adjustment controls. Compared with the Ars-Sonum Filarmonica SE, the S6 was more forceful but gave up nothing in finesse; when partnered with the Opera Callas loudspeakers, the S6 was fatigue-free, with surprising dynamics and bass, said JM. (Vol.36 No.8 WWW)

VINNIE ROSSI LIO: \$7750 AS TESTED

Vinnie Rossi, of Red Wine Audio, designed the LIO integrated amplifier around his unconventional PURE DC-4-EVR power-supply technology, which powers the electronics using two rows of series-wired ultracapacitors: one provides pure DC while the other is being charged, those roles alternating every few minutes. The LIO is modular: The buyer adds to the combination of case and power supply—a \$1995 product that, by itself, cannot pass a music signal—his or her choice of volume-control module, input-selection module, line stage, phono stage, D/A converter, headphone amp, and power amp, prices and options for which are too numerous to list here. HR was charmed: "Right out of the box, the Vinnie Rossi LIO played music that flowed smoothly and silkily." He noted in particular the amp's "detail, drive, and forward momentum." HR's verdict: "If there is a more innovative and musically satisfying integrated amplifier than the Vinnie Rossi LIO, I have yet to experience it." JA's measurements revealed "good to excellent" performance from the LIO's volume-control, phono-preamp, and digital-audio modules, but uncovered problems such as low-level spurs at 60Hz, unexpected bumps in the noise floor, power output into 8 ohms that failed to reach the 25Wpc spec by 8W, and too high a level of second-harmonic distortion for his comfort. (Vol.38 No.9 WWW)

B

CAMBRIDGE AUDIO AZUR 851A: \$1999

First cousin to the Cambridge Azur 851D DAC, the Azur 851A integrated amplifier provides 120Wpc into 8 ohms,

two balanced inputs (XLR), eight unbalanced line-level inputs (RCA), and the rare luxury of bass and treble tone controls. HR wrote that he could best describe the sound of the Azur 851A as "relaxed and enjoyably colorful, in a class-A triode sort of way. It sounded more naturally toned and weighty than my Creek 3330 or my Line Magnetic LM-518IA, and showed none of that off-putting graininess or brittleness often heard in low-priced, high-powered amps." In his measurements, JA discovered that the amp's right-channel performance was not in keeping with that of the left channel—although he suggested that the right channel's relative shortcomings were inaudible. His conclusion: "Assuming that the less-good performance of its right channel was a sample-specific fault, Cambridge Audio's Azur 851A is a well-built amplifier that offers a lot of power with very low distortion at an affordable price." HR's last word: "a versatile and extraordinarily musical cornerstone on which to build a truly enjoyable high-end system that can play all types of music with righteous aplomb for little cost." (Vol.38 No.2 WWW)

CREEK AUDIO EVOLUTION 100A: \$2195

The top-of-the-line amp from UK-based Creek, the new Evolution 100A integrated operates in class-G: A pair of Sanken Darlington transistors, biased for class-A/B, do the honors up to 25Wpc, beyond which an additional pair of transistors kicks in, for 110Wpc total into 8 ohms. Of its five line-level inputs (RCA), one can also be addressed as balanced (XLR), while any of the remaining four can be upgraded with plug-in DAC, AM/FM tuner, and phono-stage modules. HR enjoyed using the Creek's Ambit tuner (\$250), and praised the "clean, open, extended highs" of the amp's optional Ruby DAC module (\$599), which handles 24-bit/192kHz inputs via its coax and TosLink S/PDIF inputs, and 24/96 via USB—though he felt the merely "good" Sequel Mk.2 moving-magnet phono-stage module (\$200) wasn't up to the DAC's level of quality. Considering the 100A's amplification talents, HR praised it for playing a great variety of music in a "straightforward, exciting, satisfying way." Apart from some front-panel control glitches that might have been specific to "this well-traveled review sample," JA found that the Evolution 100A "measured quite well." (Vol.38 No.7 WWW)

CREEK EVOLUTION 50A: \$1195 \$\$\$

Creek's new entry-level model is a class-A/B design claimed to deliver 55Wpc into 8 ohms. It offers four single-ended and one balanced input, one of which can accommodate one of three MM or MC plug-in phono boards. The clean front panel has input-selector and Volume knobs, Balance and Tone controls, and a large display. The Creek produced an uncolored midrange, impressive bass impact, and excellent resolution of high-frequency detail, delicacy, and air, said BJR. "An involving, flexible, and good-sounding piece of electronics," he concluded, adding that it "sounds more powerful than its rating would imply." "Considering its affordable price, Creek's Evolution 50A measures fundamentally well," said JA, though he points out that its output stage is underbiased. (Vol.36 No.8 WWW)

CROFT PHONO INTEGRATED: \$1895 \$\$\$

Croft's 45Wpc Phono Integrated combines in a single package the company's Micro 25 preamplifier and Series 7 power amplifier to create a hybrid integrated in which line- and moving-magnet-compatible phono-stage gain is provided by ECC83 vacuum tubes, output power by transistors. In addition to its phono input, the Croft has three analog line inputs, but offers no remote control, digital inputs, headphone jack, or upgrade paths for USB connectivity. Apart from a small circuit board containing the bipolar timer and relays, the Phono Integrated is hand-wired, point to point, with neatly made solder joints and Bakelite terminal strips. AD liked the Croft's dual-mono volume controls, SM not so much. They agreed, however, that the Croft's sound was extraordinary: smooth, coherent, open, naturally detailed, forceful, physical, and dynamic, with a great sense of space and an expert ability to drive a beat forward. "If I were a designer or builder, this is how I would do the thing. If I were buying in this price range, this is the one I'd choose," raved AD. On JA's test bench, however, the Croft exhibited a nonflat RIAA response and

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high levels of harmonic and intermodulation distortion. According to ST, "the sound of the Phono Integrated was musical in a way that very few hi-fi components are." Apart from noting this model's 1970s-style cosmetics ("A pox on cosmetics!"), minimalist conveniences ("A pox on convenience!"), and slightly plump bass, ST declared the Croft "one of the best integrated amplifiers I have ever heard." (Vol.36 No.10, Vol.37 No.5 WWW)

HARMAN/KARDON HK 990: \$2599 ★

The gorgeous, versatile, 150Wpc HK 990 is a two-channel integrated amplifier with analog and digital inputs, tone controls, bass management, and system equalization. Line-level analog inputs include six pairs single-ended, one pair balanced, a processor HT bypass, and two subwoofers; digital inputs include two optical and two coaxial. In addition, there are moving-magnet and moving-coil phono inputs, two subwoofer outputs, two coaxial outputs, and a front-panel headphone jack. Its Analog Devices AD1955 DAC chip handles resolutions up to 24-bit/96kHz. Though it was less transparent than the Parasound Halo JC 2 preamp, the HK 990 offered impressive performance with both analog and digital sources, exhibiting taut bass, clean mids, and outstanding power and control. "The HK 990 should be on every audiophile's shopping list," said KR, adding that it's "a harbinger of the future of integrated amplifiers." JA noted that the H/K's measured performance was not compromised by its wealth of versatile features. "I am impressed," he said. (Vol.34 No.12 WWW)

HEGEL MUSIC SYSTEMS H160: \$3500

The Norwegian-made Hegel H160 swims against technology's tide with an output section based on discrete bipolar transistors operated in class-A/B, rather than the increasingly common class-D devices. The H160 is specified as offering 150Wpc into 8 ohms, and its features include a front-mounted 6.3mm headphone jack—a first on a Hegel amp—plus USB, coaxial, optical, and Ethernet digital inputs, these addressing an internal DAC whose measured performance JA described as "workmanlike." Despite his disappointment that the H160 offered only a single unbalanced analog input alongside its single balanced input, HR warmed to its "ardent and visceral" sound, and praised its playback of recorded voices as being "striking in its naturalness." JA's measurements included the observation that thermal stressing brought about a temporary increase in distortion in this otherwise "well-engineered powerhouse"; "this is not an amplifier suitable for sustained high-power use." (Vol.38 No.6 WWW)

MANLEY LABS STINGRAY ITUBE: \$6300 ★

MANLEY LABS STINGRAY II: \$5900 ★

Direct descendant of the acclaimed Stingray (reviewed by CS in December 1999), the rugged-looking, gorgeously constructed Stingray iTube is built around eight EL84 output tubes, rated to deliver 32Wpc in ultralinear mode and 18Wpc in triode mode. It offers three single-ended inputs, a certified iPod dock, a subwoofer output, and a 1/4" headphone jack. An IR/RF remote control provides full control of the amp, as well as the track functions of a docked iPod. After about 250 hours of break-in, the iTube exhibited a sound marked by "elegance, subtlety, and charm." Though it lacked some body and color, and sometimes struggled at high volumes, the iTube had a grainless, extended treble and an overall sound that was "engaging and relaxing," said EL. Though it lacked the balanced overall sound of the Simaudio Moon 13.3, the iTube "had a midrange to die for, and it effortlessly hung images in the air," summed up EL. The Stingray II is identical to the Stingray iTube, but without the iPod dock. Though it lacked some bass control and low-level resolution, the Stingray II offered a surprisingly dynamic and expansive sound with a relaxed, romantic color, said ST. (Vol.22 No.12, original version, WWW; Vol.33 Nos.3, 9, & 11, Stingray II WWW)

NAIM NAIT SSI: \$1995

Introduced 30 years after Naim Audio's original Nait, the new Nait 5si is a 60Wpc (into 8 ohms) integrated amp with a built-in headphone amp, and with inputs for four line-level sources—but no phono preamp. Inputs are selected with soft-touch buttons, and all are addressed with RCA plugs, while two of those are also equipped with DIN inputs: Naim's traditional preference. HR enjoyed the Nait

5si for tracking complex rhythms with perfection, and for keeping even the most microscopic pitch intervals "in good focus." The Nait 5si lacked color and spaciousness compared to HR's more expensive tubed integrated, but "made it easy to hear—watch—the music's" rhythms. Forward momentum was spellbinding: The Nait directed my attention toward how the players attacked their instruments." Apart from inverted signal polarity on the headphone output, JA found nothing untoward in his measurements—noting, in fact, that the Nait developed more output power than specified. HR summed up: "The Nait 5si is a world-class integrated amplifier that delivers more audio precision and musical enjoyment than any self-respecting anti-imperialist should ever need." (Vol.37 No.10 WWW)

OCTAVE AUDIO V 40 SE: \$4500

The entry-level V40 SE Line, from Germany's Octave Audio, is an integrated amplifier with an active line-only preamp section and—despite its model designation—a push-pull output section, using two KT88 pentode tubes per side to produce 40Wpc. (A wide variety of similar pentodes can be used instead, but not all will produce the same amount of power.) The output tubes are operated as true pentodes, and the design entails 10dB of global feedback; output-tube bias is user-adjustable via system of which AD remarked, "I have never encountered a surer, safer, less ambiguous, or altogether better means of checking and adjusting tube bias." He was similarly impressed by the Octave's musical performance, describing its ability to portray musical timing and momentum as "superb." AD also enjoyed the V40 SE's "up-front" sound and "better-than-average sense of scale," also noting that while it didn't sound bright, it had sufficiently extended trebles that "reasonable care should be taken in the setup and adjusting of partnering gear." An easy-to-install power-supply enhancement, the Octave Black Box (\$1200), made an audible improvement, but shouldn't be considered mandatory. JA noted that the V40 SE "measured as I would expect from a traditional design that uses a pair of KT88 output tubes for each channel," and praised the amp's "impressively high standard" of construction. (Vol.37 No.8 WWW)

PEACHTREE AUDIO NOVA125SE: \$1199

The handsome, remote-controlled nova125 combines a 125Wpc amplifier, preamplifier with tubed buffer stage, headphone amp, and asynchronous USB DAC capable of handling resolutions up to 24-bit/192kHz. It offers three S/PDIF inputs, one analog input, and a preamp output. Though it lacked some resolution, the Peachtree had a slightly warm and soft overall sound, with excellent tonality, well-defined bass, and smooth highs, said ST. "Peachtree Audio has delivered a plum," he concluded. Add \$100 for Cherry or Rosewood finish. (Vol.36 No.1 WWW)

ROGERS HIGH FIDELITY EHF-100: \$7000

Made in the US by former NASA engineer Roger Gibboni, the EHF-100 is rated to deliver 65Wpc (JA measured 35Wpc) into 8 ohms; offers four pairs of line-level inputs; and uses two EF86 miniature pentode, two 12AX7 triode, and four KT88 power tubes. Fit and finish were excellent. Though not as nuanced, colorful, or dramatic as AD's reference Shindo separates, the EHF-100 distinguished itself as a tight, punchy-sounding amplifier with loads of natural detail, a very good sense of momentum, and an excellent sense of space. Despite differences in the noise floor between its two channels, the EHF-100 measured well "for a classic design," said JA. (Vol.35 No.11 WWW)

ROGUE SPHINX: \$1295

The Sphinx is that rarity in contemporary audio: a US-made integrated amplifier with a tubed (12AU7) line stage, a MM-appropriate phono stage, and a headphone jack, all for less than the price of a round-trip ticket to Paris—and Rogue Audio doesn't even make you buy their remote handset (\$100). Using Bruno Putzeys's Hypex class-D power modules in tandem with a nonswitching power supply, this hybrid integrated delivers 100Wpc into 8 ohms or 200Wpc into 4 ohms. HR enjoyed his time with the Sphinx, noting its "greater scale and bass force" than his Creek 4330 integrated, and praising its line stage as perhaps "the best of [its] many good features: Everything

I played was enjoyably detailed, transparent, and spacious." HR's verdict: "Judging by my experiences with the Sphinx, Rogue's owner and designer, Mark O'Brien, has taken this stigmatized, lower-class mode of operation to a new, more refined level." According to JA, apart from a bit of ultrasonic noise in its output, the Sphinx's amplifier section avoided most of the usual class-D pitfalls, and he particularly praised the MM phono section. (Vol.37 No.8 WWW)

ROKSAN KANDY K2 BT: \$1900

This solid-state integrated amp, descended from the original Roksan Kandy K2 (reviewed by AD in Vol.33 No.5), is notable for offering both an MM phono stage and a Bluetooth input alongside its three line-level inputs. The Kandy K2 BT, which also provides a pair of preamp-out jacks and a bypass input for AV fans, delivers 140Wpc into 8 ohms and 250Wpc into 4 ohms. In HR's system, "The K2 BT showed consistently good tone and scale, but music often felt a tad soft and round—especially at the edges of string plucks and keystrokes." That said, HR declared that "[the Roksan's] phono stage was the best I've heard in a moderately priced integrated—it played LPs in living color." As for Bluetooth, HR was underwhelmed, noting that "the detail, life and naturalness exceeded my expectations but I was disappointed by the amount of low-level fuzz and blur I was noticing." He found that Bluetooth music sounded best when playback levels were kept in check. In his measurements, JA echoed that last sentiment—"if you use the Roksan's BT input, keep your source's volume control down"—and commented that the K2 BT's frequency response "depends to a larger extent than usual on its volume-control setting." (Vol.37 No.11 WWW)

UNISON RESEARCH SIMPLY ITALY: \$3000 ★

The solidly built Simply Italy uses an ECC82 driver tube and an EL34B output tube to deliver 12Wpc. It measures just 10" W by 7.5" H by 15.5" D and offers four line-level inputs, a tape loop, and a single set of outputs optimized for 4–8 ohm speakers. Solid-wood inlays around the hefty, stainless-steel volume and selector knobs help damp vibrations. Fit and finish were outstanding. Though it lacked the dimensionality and expansiveness of larger Unison Research amplifiers, the Simply Italy had a confident, solid sound with surprisingly tight bass, said ST. "My little bambino." He sums up. "Clear, crisp sound, tight bass for all of its 12 watts." ST thinks there may be no better amp for small-group jazz. The Simply Italy was an especially good partner for DeVore Fidelity's Orangutan O/93 loudspeakers, said ST. Replacing the amp's stock EL34Bs with Genalex KT77 output tubes resulted in an airier sound with less robust bass and improved top-end extension. (Vol.35 No.8; Vol.37 No.1)

C

ARCAM FMJ A19: \$999 \$\$\$

Rated to deliver 50Wpc into 8 ohms, the FMJ A19 is Arcam's most affordable integrated amplifier. It provides six line-level inputs, tape and preamplifier outputs, a moving-magnet phono stage, and two front-panel mini-jacks: one for driving headphones, the other for connecting an iPod. While the A19 gets its power from a hefty toroidal transformer, a second internal power supply can deliver a direct, isolated, and regulated 6V to two of Arcam's r-series products, such as the BLink Bluetooth DAC that ST enjoyed. Build quality was excellent, setup simple, operation flawless. Though it lacked some smoothness and drama, the A19 combined a sweet treble, a clean midrange, and well-defined bass for a sound that was fun, involving, and never fatiguing, said SM. JA noted excellent measured performance, but warned that the A19 shouldn't be used to drive at high levels loads much below 6 ohms. Borderline Class B. (Vol.37 No.1 WWW)

MUSIC HALL A15.3: \$549

Rated at 50Wpc into 8 ohms or 75Wpc into 4 ohms, the Music Hall a15.3 is a full-size (16.9" W by 3.1" H by 13.2" D) integrated amplifier that includes a MM phono input, mini-jack and RCA line-level inputs, and a front-panel headphone jack. SM admired the a15.3's "high level of fit and finish," adding that the amp performed without flaw in his system. Using the a15.3 with Music Hall's compan-

ion c15.3 CD player—DAC and comparing it with NAD's C 515BEE CD player and C 316BEE integrated amplifier, SM found that the a15.3 sounded "more open and airy, and produced a wider, deeper soundstage with beautifully focused images," although it "lacked the NADs' intangible smoothness and musical flow." Among the inputs offered, none impressed SM more than the a15.3's phono stage, which "sounded superb—quiet, dynamic, and emotionally compelling." (Vol.37 No.6 WWW)

NAD D 3020: \$499 \$\$\$

Launched to celebrate NAD's 40th anniversary, the 30Wpc D 3020 takes only its name from the company's iconic 3020 integrated amplifier; every other aspect of the design has been thoroughly modernized. It uses a switch-mode power supply, lacks a phono stage, and has only a single analog input, but includes a front-panel headphone minijack; an optional 6dB bass boost; a subwoofer output; coaxial, optical, and 24-bit/96kHz-capable asynchronous USB inputs; and uses an audio-optimized aptX codec for Bluetooth streaming. Weighing just 3 lbs and measuring an unusual $7\frac{3}{8}$ " H by $2\frac{5}{16}$ " W by $8\frac{9}{8}$ " D, the D 3020 can be placed horizontally, like a traditional component, or stood upright, like a modern or hard drive. Uncommonly sensual for a hi-fi product, it has a large, textured volume knob; soft, smooth side panels; and a touchscreen that occupies its entire front panel and extends through one entire side panel. The sound from every input was warm, present, and naturally detailed; even low-quality MP3s streamed wirelessly via Bluetooth were engaging, said SM. "Right now, NAD's D 3020 is the best bargain in all of hi-fi," added ST. Borderline Class B. (Vol.36 Nos. 11 & 12, Vol.38 No.5 WWW)

NAD C 316BEE: \$379 \$\$\$ *

Descendant of NAD's famed 3020 integrated amplifier, the 40Wpc C 316BEE uses a new variant of the Power Drive technology found in NAD's Master Series components, said to maximize the short-term dynamic power sent to loudspeakers. It has five inputs, a single set of user-friendly binding posts for easy connections, defeat-able tone controls, a headphone jack, and an iPod mini-jack. The NAD matched power with grace, providing a rich, forceful overall presentation and an impressive ability to follow complex musical passages and make clear, truthful distinctions among musical instruments. Compared to the Jolida FX10, the NAD produced a far more compelling listening experience, with faster attacks, longer decays, and a wider soundstage, said SM. (Vol.34 No.7 WWW)

PS AUDIO SPROUT: \$799 \$\$\$

Designed in Colorado, and built in China, the PS Audio Sprout is a compact (6" W by 1.75" H by 8" D) integrated amplifier with built-in MM phono preamp, 24-bit/192kHz USB D/A converter, and Bluetooth receiver. The Sprout's class-D power amp can deliver up to 33Wpc across an 8-ohm load, and its front panel incorporates a $\frac{1}{4}$ " headphone jack, use of which automatically mutes the loudspeaker output. In his review, HR observed that the Sprout occasionally lent the sound "a trace of darkness—not grayness or lack of color," but he found that the little Sprout consistently "demonstrated an ability to engage my attention and keep it locked on the space, character, and artistry of the music being played." HR also felt that the Sprout's Bluetooth wireless performance was "richer, more detailed, less hollow and rapid than any Bluetooth sound I've tried so far," though he found the Sprout's sound through headphones less rich than through speakers. Apart from a response-curve bump centered at 67Hz, JA's measurements uncovered nothing untoward. HR's conclusion: "The Sprout specialized in the beguiling reproduction of every kind of music I sent through its four inputs." (Vol.38 No.5 WWW)

D

LEPAI LP7498E: \$99.90

Rated to deliver 100Wpc via its TriPath class-D output stage, the Lepai is a small (4.5" W by 1.25" H by 7" D) integrated amplifier with one pair of RCA inputs, two pairs of speaker binding posts, and a dedicated 36V DC power supply. It uses STMicroelectronics' TDA7498 class-D module and supports Bluetooth streaming but not aptX.

CDs played through the Lepai's RCA input sounded big, bold, and emotionally compelling, with a natural midrange, sweet highs, good bass weight, and well-focused images, but digital files streamed via Bluetooth sounded gritty, compressed, and murky, said SM. Sold by Parts Express with a 45-day money-back guarantee and lifetime service warranty. (Vol.37 No.2 WWW)

K

Musical Fidelity NuVista 800.

DELETIONS

Ayre Acoustics AX-5 replaced by new model; AVM Inspiration C8 discontinued; Swissonor V.S.O.P. not currently available in the US; Audio Research VS160, Cayin SP-10A, Leben CS300, Outlaw Audio RR2150, Rega Brio-R, all not auditioned in a long time.

LOUDSPEAKER SYSTEMS

Editor's Note: Class A "Loudspeakers" are sufficiently idiosyncratic and differ enough from one another that prospective customers should read *Stereophile's* original reviews in their entirety for descriptions of the sounds. I have therefore just listed every system or combination that at least one of *Stereophile's* reviewers feels, as a result of his or her experience, approaches the current state of the art in loudspeaker design. (Note that, to be eligible for inclusion in Class A, the system *must* be full-range—i.e., feature bass extension to 20Hz. It must also be capable of reaching realistic sound-pressure levels without any feeling of strain.)

For those unconcerned about the last fewertz of low-bass extension, we have created "Classes A, B, and C (Restricted Extreme LF)" for those speakers that are state of the art in every other way. Candidates for inclusion in this class must still reach down to at least 40Hz, below the lowest notes of the four-string double-bass and bass guitar.

In addition, such has been the recent progress in loudspeaker design at a more affordable level that we have an extra class: E, for "Entry Level." Someone once asked us why *Stereophile* bothers to review inexpensive loudspeakers at all: In effect, aren't we insulting our readership by recommending that they buy inexpensive models? Remember: It's possible to put together a musically satisfying, truly high-end system around any of our Class D and E recommendations. That's why they're listed—and why you should consider buying them.

A—FULL-RANGE

GAMUT RS7: \$39,900/PAIR

(Vol.38 No.9 WWW)

KEF BLADE TWO: \$25,000/PAIR

(Vol.38 No.6 WWW)

MBL RADIALSTRAHLER 101E MK.II:

\$70,500/PAIR *

(Vol.35 No.4 WWW)

REVEL ULTIMA STUDIO2: \$15,998/PAIR \$\$\$ *

(Vol.31 No.3, Vol.32 No.12 WWW)

TAD EVOLUTION ONE E1 LOUDSPEAKER:

\$29,800/PAIR

(Vol.36 No.7 WWW)

VIVID G1 GIYA: \$67,990/PAIR *

(Vol.33 No.7 WWW)

VIVID G3 GIYA: \$39,990/PAIR

(Vol.37 No.4 WWW)

WILSON AUDIO SPECIALTIES ALEXANDRIA XLF:

\$210,000/PAIR

(Vol.36 No.1 WWW)

WILSON AUDIO SPECIALTIES ALEXIA:

\$52,000/PAIR

(Vol.36 No.12 WWW)

YG ACOUSTICS SONJA 1.3: \$106,800/PAIR

(Vol.36 No.7 WWW)

A (RESTRICTED EXTREME LF)

AERIAL MODEL 7T: \$9995/PAIR *

This compact (44.5" H by 9.7" W by 15.3" D), three-way floorstander uses a 1" soft ring-radiator tweeter with dual magnets and a machined waveguide; a 5.9" papyrus-blend midrange cone with a 1.25" voice-coil, dual magnets, and cast magnesium frame; and two 7.1" biaminate-cone woofers with 1.5" voice-coils and cast magnesium frames. The 7T provided a well-balanced sound overall, with a stable soundstage, pinpoint imaging, detailed and transparent highs, a gorgeous midrange, and neutrally balanced bass. "The 7T is so good that it should provide any listener with joyful musical communication," KR concluded. JA found excellent measured performance. (Vol.35 No.3 WWW)

ATC SCM19 V.2: \$4299/PAIR

(STANDS NECESSARY)

Designed around a sealed enclosure with curved side panels, a lute-shaped cross section, and a volume of 19 liters—hence the model number—ATC's SCM19 v.2 is a two-way loudspeaker with a 1" non-hemispherical soft-dome tweeter and a 6" woofer, the 3" dustcap of which is said to function as a midrange dome; both drivers are of ATC's own design and manufacture. The SCM19 v.2's cabinet is only 17.1" high, yet weighs a hefty 39 lbs; its frequency response is specified as 54Hz–22kHz, –6dB, its nominal impedance as 8 ohms, and its sensitivity as 85dB/W/m. Comparing the ATC to a similarly small, sealed-box loudspeaker of some renown, the classic BBC LS3/5a, JM found that the SCM19 v.2 "exhibited an arresting increase in resolving power." Similarly, he wrote that the SCM19 "decisively strode ahead of" ATC's less expensive SCM7 v.3 in resolution and bass extension, noting that while the SCM7 "had no distortion that I was aware of, the [low-frequency] driver in the SCM19 was so much more revealing that it was not funny." JM summed up: "The SCM19 might be all the speaker most people will ever need. Well done. Highly recommended." (Vol.37 No.6 WWW)

DEVORE FIDELITY ORANGUTAN O/96:

\$12,000/PAIR (STANDS INCLUDED)

Handmade in Brooklyn, New York, the O/96 is a two-way, reflex-loaded, stand-mounted speaker with a rated sensitivity of 96dB/W/m and an unusually high nominal impedance of 10 ohms. The wide-baffle design measures 28.25" H by 18" W by 12" D and has a 1" silk-dome tweeter and a 10" paper-cone woofer. The O/96 exhibited a superb overall tonal balance with impressive clarity, color, impact, drama, and scale, said AD. "The O/96 is distinctly easy to drive with low-power amplifiers, yet it's clearer, wider of bandwidth, and more spatially accomplished than most other high-sensitivity loudspeakers," he summed up. JA's measurements uncovered a low-treble resonance and a lively enclosure, but these problems were considerably less audible than he was expecting. AD originally considered this a very high Class B recommendation, bordering on Class A, but as of April 2015, the rating is upgraded. In a Follow-Up, AD noted: "I have refined my own O/96 installation, moving each speaker farther from its sidewall, and minimizing the influence of unfortunate room characteristics with some John DeVore-inspired asymmetry," with excellent results. AD also quoted John DeVore's observation that, in 2013, the O/96 was his best-selling model "by a clear margin. I wouldn't be surprised to see that it did that again in 2014." (Vol.35 No.12, Vol.38 No.1 WWW)

DEVORE FIDELITY ORANGUTAN O/93:

\$8400/PAIR

Made in Brooklyn, New York, the Orangutan O/93 is a two-way floorstanding loudspeaker with a 1" soft-dome tweeter and a 10" paper-cone bass/midrange driver. It measures 35.5" H by 15" W by 10" D, and has a claimed sensitivity of 93dB and a nominal impedance of 10 ohms. The beautifully finished cabinet is made from a combination of Baltic birch plywood and MDF; the front baffle has a distinctive fiddleback mahogany veneer, while the sides, back, and rear are veneered in maple and finished in high-gloss piano-black lacquer. Driven by ST's Unison Research Simply Italy, the DeVores delivered a lively, immediate sound, with a sweet and extended treble, punchy

bass, and a deep, wide soundstage with excellent center fill. (Vol.37 No.1)

ENIGMACOUSTICS SOPRANINO SUPERTWEETER: \$3690/PAIR (STANDS OPTIONAL)

Here's something you don't see every day: a horn-loaded, self-polarized, electrostatic supertweeter. Named after the smallest members of the saxophone and clarinet families, the Soprano is a 6-lb, 7.6"-tall, more or less cubical enclosure intended for installation either atop the user's nominally full-range speakers or on their own height-adjustable stands (\$600/pair). Its 12dB/octave high-pass filter can be set to one of three crossover frequencies—8, 10, or 12kHz—and connection via the Sopraninos' binding posts puts the supertweeters in parallel with their host speakers. A rear-mounted toggle switch offers the option of -3dB of attenuation. JA found that the Sopraninos, when used with the Joseph Audio Perspective loudspeakers, had a decidedly subtle influence on the sound of his system; on removing them after a week of listening, he declared his system still sounded good—"Just not *quite* as good." With JA's vintage Rogers LS3/5a loudspeakers, the Sopraninos allowed cymbals to sound "more like struck bronze than shaped and textured white noise," and stereo imaging was more palpable. Measurements revealed a clean cumulative spectral-decay plot and other distinctions, although JA was surprised that, by the end of the review, one of the Sopraninos had ceased performing above 15kHz: an enduring mystery. (Vol.37 No.6 WWW)

FUJITSU TEN ECLIPSE TD712Z Mk.2: \$10,600/PAIR (STANDS INCLUDED)

RD reviewed the original version of this unique speaker—it uses a single 4.7" driver with a glass-fiber/cotton cone mounted in an egg-shaped ported enclosure—in January 2007 and was very impressed with its sound. Though the TD712Z wouldn't play very loud and didn't go very deep, it had clarity, transparency, resolution, timbral accuracy, and image specificity that were "simply breathtaking," said RD. JA was impressed by the speaker's time-coincident presentation and freedom from cabinet resonances, though he was more bothered by its distinctly non-flat frequency response. The new version improves the original's power handling and extends its low-frequency response. "In a modestly sized room, with no help from subwoofers, the TD712Z Mk.2s delivered sound that was... well... extraordinary," he concluded. Matching sand-filled stands are included. (Vol.30 No.1, Vol.38 No.5 WWW)

HARBETH MONITOR 30.1: \$5695/PAIR IN CHERRY FINISH (STANDS NECESSARY)

The Monitor 30.1 is a two-way, front-ported design with a 1" soft-dome SEAS tweeter and Harbeth's 7.8" Radial2 mid/woofer. Fit and finish were superb. Though too demanding a load for ST's 3.5Wpc Sun Audio SV2A3 amplifier, the Monitor 30.1 produced "ravishing" midrange texture, tonality, and resolution when partnered with higher-powered solid-state amplification. Compared to the Triangle Comète Anniversaire, the Harbeth sacrificed speed and agility for richness and warmth. "If you're into classical and jazz, there is no other loudspeaker I can recommend so highly for \$6500/pair," concluded Sam. Standard finish is Cherry. Add \$400/pair for Eucalyptus or Rosewood, \$800/pair for Tiger Ebony finish. (Vol.35 Nos.11 & 12)

JOSEPH AUDIO PERSPECTIVE: \$12,999/PAIR

The 36"-tall, floorstanding Perspective combines the same SEAS 1" impregnated-fabric dome tweeter used in Joseph Audio's Pulsar with two SEAS 5.5" magnesium-cone woofers, all mounted on a baffle profiled to optimize high-frequency dispersion. The woofers are reflex-loaded with a rear-mounted resistive port—the resistive foam can be removed for certain applications—and, according to JA, with "an Asymmetrical Infinite Slope Crossover set at 2kHz, with about a 40dB/octave low-pass slope for the woofers." In his listening, JA noted slightly unforgiving trebles on recordings with ragged high frequencies, but with good recordings, the Perspectives delivered "a wide, rich sweep of full-range sound, with tangible stereo imaging." JA also noted midrange clarity and lack of coloration, and that the Perspective's bass performance required an amp with a firm hand lest it sound a bit phat. Summing

up with praise for the Perspective's cosmetics and small footprint, he concluded: "It's a lot of high-performance loudspeaker in a beautiful, modest-sized, domestically appealing package." (Vol.37 No.7 WWW)

JOSEPH AUDIO PULSAR: \$7700/PAIR ★ (STANDS NECESSARY)

The compact (15" H by 9" W by 13" D), rear-ported Pulsar uses a 1" Sonatex-dome tweeter and a 5.5" cast-magnesium cone woofer, both built to Joseph Audio's specifications by SEAS. The MDF cabinet has an attractively beveled, piano-black front baffle; side panels are available in a choice of four high-gloss veneers as well as piano black. The Pulsar produced sweet treble, a neutral midrange, solid bass, and superbly focused images for a natural, involving overall sound, said MF. JA was impressed by the Pulsar's superbly flat on-axis response and well-damped enclosure. (Vol.35 No.6 WWW)

KEF LS50 ANNIVERSARY MODEL:

\$1499.99/PAIR \$\$\$ (STANDS NECESSARY)

This tribute to the famed LS3/5a monitor was made to celebrate KEF's 50th anniversary. Measuring just 11.9" H by 7.9" W by 10.9" D, the two-way, reflex-loaded design combines, in KEF's Uni-Q driver array, a 1" vented aluminum-dome tweeter and a 5.25" woofer cone of magnesium-aluminum alloy. The beautifully finished, computer-modeled MDF cabinet incorporates a convex front baffle, offset port, and damped internal cross-bracing for optimal suppression of external sound radiation and internal standing waves. The LS50 produced a surprisingly large, clean, transparent sound, with natural tone color and precise, stable stereo imaging, said JA, who also noted superb measured performance. "Recommended. Highly." ST found the LS50's tonality "spot-on, more neutral than sweet," adding that the diminutive KEFs could deliver "surprising bass: down to around 50Hz." ST's verdict: "I haven't had such great sound in my listening room since the departure of Quad's ESL-2805 electrostatics." As SM put it: "In 13 years of working at *Stereophile*, I have not seen another component that offers such a radical combination of value and performance." Late in 2014, after spending time with some new LS50 samples, JA wrote: "[Although] it had been two years since I'd last listened to the KEF LS50 at home, getting a new pair reminded me why I had so highly recommended them. The KEF LS50 gave a sound that was evenly balanced from the upper bass through the high treble, with superbly defined imaging." (Vol.35 No.12, Vol.37 Nos. 5 & 6, Vol.38 No.1 WWW)

LANSCH AUDIO 5.1: \$45,000/PAIR

Made in Germany, the Lansche Audio 5.1 is a three-way, floorstanding, reflex-loaded design with a horn-loaded Corona plasma tweeter, a 4" polypropylene-cone midrange unit, and two 8.7" glass-fiber/fabric cone woofers. It measures 40.9" H by 10.1" W by 19.3" D, weighs 167.5 lbs, and is available in a variety of exotic satin veneers. The Lansche's sophisticated, revealing highs and lean, articulate bass were unforgiving of thin-sounding recordings, but the pair of them had a wonderful sense of space and superb stereo imaging, said JA. Very difficult to drive. To get the best from the Lansches, careful consideration should be taken in placement and partnering amplification, the tubed Audio Research Reference 150 working much better than good solid-state amplification. Price is in satin veneer; High Gloss adds \$5000/pair; Piano Black adds \$3000/pair. (Vol.35 No.7 WWW)

MAGICO Q5: \$65,000/PAIR ★

The massive Q5 (47" H by 12" W by 21" D, 387 lbs) is a four-way, sealed-box floorstander using a 1" beryllium-dome tweeter, 6" Nano-Tec midrange driver, 9" Nano-Tec midbass cone, and two 9" Nano-Tec woofers. Made entirely of aluminum and brass, the Q5's complex frame system is assembled from more than 50 machined parts with more than 350 fasteners of various types. Though it lacked some bottom-end weight and drive, which keeps this speaker from being rated Class A (Full-range), the Q5's transparency, resolution, and freedom from boxy colorations made it the smoothest, most detailed, least mechanical-sounding loudspeaker MF had ever heard. JA was equally impressed. Hard anodized aluminum finish adds \$6500/pair. (Vol.33 No.11 WWW)

MARTEN DJANGO XL: \$15,000/PAIR IN PIANO BLACK

Made in Sweden, the Django is a three-way, reflex-loaded floorstander with a 1" ceramic-diaphragm tweeter, 6" ceramic-diaphragm midrange unit, and three 8" aluminum-cone woofers. The cabinet is made of 25mm-thick MDF, has nicely rounded edges to reduce diffraction, and comes available in high-gloss Piano Black or Silver Grey (adds \$1500/pair). Fit and finish were superb. The Django had an open, uncolored, well-balanced overall sound, with outstanding soundstaging, warm and full-bodied bass, a superb midrange, and a treble that was both revealing and forgiving, said EL. "Marten's Django XLs gave me the best sound I have ever heard in my room. Highly Recommended," he concluded. (Vol.35 No.9 WWW)

MARTINLOGAN MONTIS: \$9995/PAIR

Made in Canada, the elegant Montis combines a 44" H by 11.3" W Curvilinear Line Source (CLS) electrostatic high-frequency panel with a 10" high-excursion, aluminum-cone woofer, the latter powered by a 200W amplifier. The bass cabinet is available in glossy finishes of hand-rubbed black ash, dark cherry, or black cherrywood. Though it lacked pinpoint imaging, the Montis had a scintillating treble, fast and weighty bass, and a natural midrange, said RD. Though he found respectable measured performance, JA cautioned that the Montis will sound rolled off on top when driven by a tube amplifier with a high source impedance. (Vol.35 No.9 WWW)

SONY SS-AR2: \$20,000/PAIR

This three-way, reflex-loaded, floorstander looks very similar to Sony's more expensive SS-AR1, but is 4" shorter, has twin 6.5" aluminum-cone woofers instead of the SS-AR1's 8" units, and has less extended low frequencies. The SS-AR2's 1" soft-dome tweeter and its Scan-Speak 5" sliced-paper-cone midrange unit are the same as in the SS-AR1, as is the strategically braced cabinet construction: panels of Scandinavian birch with a 2"-thick front baffle of laminated Japanese maple. The SS-AR2 combined sweet highs, well-extended lows, and a slight excess of midrange energy for an overall sound that was both pleasantly warm and superbly detailed, said JA, who was similarly impressed by the speaker's measured performance. (Vol.35 No.10 WWW)

SONY SS-NA2ES: \$10,000/PAIR

Cosmetically similar to Sony's more expensive SS-AR2, the SS-NA2ES is a beautifully finished three-way tower, approximately 35" H by 10" W by 16" D, with drive units custom made by Scan-Speak in collaboration with Sony: twin 6.5" aluminum-cone woofers and a 5" midrange unit; but while the SS-AR2 used a single conventional 1" tweeter, the SS-NA2ES vertically mounts its 1" silk-dome tweeter between two 0.75" fabric-dome "assist" tweeters. The straight-sided cabinet is made of Scandinavian birch ply and finished in a luxurious dark-brown gloss. With some overcooked recordings, the Sony's highs had too much sparkle, but overall the speaker offered low coloration, high sensitivity, accurate and stable stereo imaging, and satisfying lows, said JA, who also noted excellent measured performance. "The SS-NA2ES offers its owner 90% of the performance of the SS-AR2 for 50% of its price," he concluded. (Vol.36 No.9 WWW)

SPENDOR D7: \$5995/PAIR \$\$\$

The British-built D7 is a 2.5-way, 38"-tall floorstander, with a rated sensitivity of 90dB/W/m and a nominal impedance of 8 ohms. Its driver complement includes a 7/8" soft-dome tweeter with a specially designed cover of stainless-steel mesh, a 7" plastic-cone mid/woofer, and a 7" Kevlar-cone woofer, the latter two both made by Sendor and loaded by the same rear-mounted reflex port. Used with ST's 80Wpc Quicksilver Silver 88 tubed mono-blocks—"a superb combination"—and giving their best about 3' from the wall behind them, the D7s played with "authority, weight, and speed." ST praised the speaker's fine trebles—"a crystalline clarity that put the Sendor D7 among the finest speakers I have heard at any price"—and noted that, "40 years on, Sendor is still known for getting the midrange right." Although ST's 3.5Wpc 2A3 amplifier failed to coax from the D7 sufficient bottom-end authority, the sound of that combination was "glorious"—and the

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Spendor was otherwise easy to drive with tubes or transistors, ultimately coaxing from the floorstander-phobic ST the highest praise: "one of the finest loudspeakers I have had in my listening room." JA confirmed its distinction as a 2.5-way (not a 3-way) design, and praised its overall "excellent measured performance." (Vol.37 No.9, Vol.38 No.4 WWW)

TAD LABORATORIES COMPACT REFERENCE CR1: \$42,000/PAIR ★ (STANDS NECESSARY)

Designed by Andrew Jones, this three-way, reflex-loaded, stand-mounted loudspeaker measures 24.7" H by 13.4" W by 17.5" D and weighs just over 100 lbs. It uses an 8" sandwich-cone woofer and a 1.375" beryllium-dome tweeter concentrically mounted with a 6.5" beryllium-cone midrange driver, all made by TAD. Finished in a gorgeous piano-gloss wood veneer, the speaker's enclosure includes a strong internal framework formed by 0.9"-thick, CNC-machined birch plywood clad with laminated MDF panels. JA: "It lacks the very lowest octave and is balanced a tad forward, but in all other respects it represents the state of the art of loudspeaker design and sound." Matching stands add \$3600/pair. (Vol.35 No.1 WWW)

TRIANGLE SIGNATURE DELTA: \$8000/PAIR

Triangle's Signature Delta is a three-way floorstander whose drivers and enclosure are all designed and manufactured in-house, said house being in France. Its two 7.3" fiberglass-cone woofers are loaded by a bifurcated reflex port on the front, while a 7.3" paper-cone midrange driver handles most of the audioband. That midrange is of notably limited excursion, in which vintage context the Signature Delta's horn-loaded titanium-dome tweeter, mounted atop the 4'-tall, curved-sidewall cabinet, fits well. Triangle specifies the Signature Delta's sensitivity as 92dB/W/m and its impedance as 8 ohms nominal, 3.2 ohms minimum (but see below). JA praised the Triangle's bass, observing that "a pipe-organ recording... had tremendous weight through the Deltas when the bass pedals descended to 32Hz," while noting that the Delta's low frequencies had "excellent pace and force" and "[a] propulsive way with well-recorded rock." JA praised as equally important the speaker's resolution and clarity, and noted a superior "jump factor" that did not compromise neutrality: "Unless you like your music tame and uninvolving, this is a speaker well worth an audition." In his measurements, JA described the Signature Delta as "a well-engineered, well-optimized loudspeaker," although he uncovered an unkind impedance-phase angle at 82Hz that would seem to require a well-muscled amp. (Vol.37 No.9 WWW)

VIVID OVAL K1: \$25,990/PAIR

The K1 is similar in appearance to Vivid's less expensive B1, but whereas the B1 uses single woofers on its front and rear panels, the K1 has two woofers each fore and aft, and its cabinet extends lower to accommodate them. In addition, the K1's higher minimal impedance of 4.8 ohms (vs 2.8 ohms for the B1) makes it an easier load for the partnering amplifier. Compared to the B1, the K1 offered greater bass extension and had the more tactile and inviting lower midrange and treble, said JM. "Vivid's Oval K1 is one of the best loudspeakers I have ever heard," he concluded. (Vol.35 No.10 WWW)

VIVID B1: \$16,990/PAIR ★

Big brother to Vivid's V-1.5 and also designed by Laurence Dickie, the B1 is a three-way floorstander using Vivid's D26 metal-dome tweeter, D50 metal-dome midrange unit, and two C125 metal-cone woofers. It measures 43" H by 10.4" W by 14.75", weighs 84 lbs, and has an internal volume of 44 liters—exactly twice that of the V-1.5. Just as coherent as the V-1.5 but with greater bass extension, wider dynamic range, and a larger soundstage, the B1 had a relaxed, smooth, and effortless overall sound. "The B1 is so much more capable a speaker than the V-1.5 that, if you can afford it, the B1 actually represents better value for money," said JM. Though the B1's clean, grain-free treble could be "a little too revealing" of brighter recordings, JA appreciated the speaker's generous bass, natural midrange, superb imaging, and explosive dynamics. (Vol.34 Nos.2 & 10 WWW)

VOLTI AUDIO VITTORA: \$21,500/PAIR

Handmade in the US, the Vittora is a three-way, fully horn-

loaded loudspeaker in two enclosures per channel, both made entirely of Baltic birch plywood. The lower bass cabinet is a single-fold bifurcated horn with a 15" rear-facing woofer; the upper enclosure houses a rectangular midrange horn and an elliptical treble horn. Build quality was excellent. The Vittora had a beautifully balanced, nuanced, and compelling sound, with smooth highs, forceful bass, and a remarkable sense of drive, said AD. "Volti Audio's Vittora is a great loudspeaker and a seriously great value," AD decided, though he adds "Not for the squeamish!" (Vol.36 No.9 WWW)

WILSON AUDIO SPECIALTIES DUETTE SERIES 2: \$22,500/PAIR WITH STANDS (STANDS INCLUDED)

In the words of company founder/chief designer Dave Wilson, the Duette Series 2 loudspeaker was created for a "hostile environment," the definition of which includes limited floor space and the need to keep loudspeakers close to room boundaries. Codesigner Daryl Wilson made for the Series 2 a new stand, to which the crossover and connecting cables are integral. Other refinements include a more sculpted shape, and a new treble driver derived from the Convergent Synergy tweeter Dave Wilson designed for his top-of-the-line Alexandria XLF. Driven by low-power tube amps, the Series 2 Duettes impressed AD with how they "nailed the timbral colors of instruments and voice alike, with generous and very realistic saturation." And although the Duettes didn't have quite the scale or impact of his large Altec horns, AD observed that the Wilsons' "deep-bass power and extension were surprisingly good for their size. Cellos sounded subjectively undiminished down to their lowest tones, as did timpani and most double-bass notes, while nearly full weight was given to the orchestral bass drum." JA's measurements confirmed the high (91.6dB) sensitivity of the Duette Series 2, and he confirmed that, "Overall, the Wilson Duette's measured performance suggests that it is a well-engineered design optimized for use close to the wall behind it." (Vol.38 No.3 WWW)

WILSON AUDIO SPECIALTIES SOPHIA SERIES 3: \$22,500/PAIR ★

The latest Sophia is a three-way, reflex-loaded floorstander with a 1" inverted titanium-dome tweeter, a 7" pulp/composite-cone midrange driver, and a 10" aluminum-cone woofer. Mild creases and angles have been added to the Sophia's cabinet to increase rigidity and diminish standing waves, and thicker panels of Wilson's dense phenolic X material are used for the main walls. Like the Sophia 2, the new model was spatially stunning, sonically explicit, and musically expressive, with good drama and scale, high transparency, and low coloration, but with greater openness and resolution of detail. AD: "The Sophia 3 is a new and fine example of Wilson's modern thinking: a true high-fidelity device that's also capable of sounding beautiful." (Vol.34 No.2 WWW)

B (FULL-RANGE)

BOSTON ACOUSTICS M350: \$2498/PAIR

The M350, the top model in BA's M series, is a three-way, reflex-loaded floorstander with a 1" Extended Wide Bandwidth soft-dome tweeter, a 4.5" mass-loaded polypropylene-cone midrange, and four 5.25" polypropylene-cone woofers. The cabinet sidewalls are beveled at their tops and bottoms and finished in high-gloss black; the front baffle and the top and bottom panels are covered in black faux leather. JA used foam port plugs (included) to tame a pervasive excess of upper-bass energy. Ports plugged, the M350s offered well-defined stereo imaging and had a darkish overall balance, with smooth highs and warm lower mids. Other than a strong cabinet-wall resonance in the lower midrange, the M350 measured superbly well, said JA. (Vol.36 No.8 WWW)

BOWERS & WILKINS 683 S2: \$1650/PAIR \$\$\$

The numbers tell an unusual story: The three-way, floorstanding 683 S2 would seem almost identical to Bowers & Wilkins' well-reviewed 804 Diamond (Vol.36 No.9) in every way—save for the \$6000 difference in price per pair. As KR found, the Chinese-built, medium-sensitivity 683 S2 provided satisfying bass response, with "clean and full" or-

gan notes and, in orchestral music, timpani that had "heft and impact." Spatially, the B&W's center-fill so impressed KR that he left his seat "to make sure that, somehow, my disconnected center speaker hadn't gotten magically reconnected." KR's verdict: The five-times-as-expensive 804 Diamond "scores over the 683 S2 only with some singing voices and in extension/enhancement at the extremes of the audioband." Test results, generally unremarkable, follow in what JA describes as a B&W tradition: speakers that don't measure quite as well as they could, but whose performance on the test bench reveals a product whose sound "has been carefully managed and [is] better than one might expect" for the price. (Vol.38 No.9 WWW)

BYRSTON MIDDLE T: \$5400/PAIR

A floorstanding tower just under 40" tall, the Bryston Middle T—the name is a reference to designer and Bryston cofounder James Tanner—is a three-way, reflex-loaded loudspeaker with a complex, well-braced, and ultimately heavy (over 80 lbs) enclosure. The Middle T has a 1" metal-dome tweeter, a 5.25" polypropylene-cone midrange driver, and two 8" polypropylene-cone woofers, the last loaded by twin rear-firing reflex ports. With the Brystons in place of his usual B&W 800 Diamonds, KR reported "such integrity that it might have been generated by a single driver... large, holographic soundstages that approached what I enjoy with my multichannel system... thrilling new detail" from old, familiar recordings, and bass that was "outstanding for a speaker of this size." On the downside, KR noted that "male voices sounded natural, but somewhat richer" than he's used to, and was disappointed by the appearance of the wood veneer and the "ungainly" grilles. JA found lower sensitivity than claimed (85 vs 88dB/W/m), and an impedance curve that, in his words, "starts to resemble a short circuit at ultrasonic frequencies," indicating the need for care in the selection of a partnering amp. Rosewood veneer adds \$800/pair. Vinyl available at special order for \$4680/pair. (Vol.38 No.2 WWW)

DALI RUBICON 8: \$7995/PAIR

Neither a two-way nor even a three-way loudspeaker, the Rubicon 8 is referred to by its manufacturer, DALI, as a "2½+½+½-way" loudspeaker: None of its three 6.5" woofers covers the same range as the others, and only the one at the loudspeaker's (physical) top extends as high as 2.5kHz, whence the music is given over to a 1.15" soft-dome tweeter, which itself hands off to a ribbon supertweeter at 14kHz. Although each is operated over a different frequency range, all three woofers are, in JA's words, "technically sophisticated," and benefit from a proprietary material said to reduce hysteresis distortion. They and the higher-frequency drivers are all made by DALI, and are installed on the front baffle of a 43.5"-tall MDF enclosure, the rear panel being taken up by two pairs of binding posts and three reflex ports. JA reported hearing good bass weight—although some lower-pitched instruments sounded "overripe" and "a little on the rich side"—and noted that "the Rubicon 8's reproduction of the top octaves was superb." JA also noted that, "With all recordings I played, the Rubicon 8s threw a solid, well-defined, impressively stable soundstage, with precise layering of image depth." Writing from his lab, JA suggested that the DALI's measured performance "indicates a careful balance of its design parameters to produce a seductive yet clean full-range sound." (Vol.38 No.3 WWW)

FOCAL ARIA 936: \$3999/PAIR \$\$\$

This three-way, five-driver, French-made floorstander is among the first products to use Focal's new driver-cone material: a sandwich of flax and fiberglass that's said to offer low mass, high rigidity, and good self-damping properties. That material finds its way into the Aria 936's three 6.5" woofers and single 6.5" midrange driver, while its 1" dome tweeter is made of an aluminum-magnesium alloy, also new. The 936 also has three reflex ports—two on the front, one on the bottom—and a spiked plinth, the design of which contributed to easy setup work for RD, who also praised the 45"-tall Aria 936 for its "big, spacious sound" and for being "tonally neutral, with impressive dynamics, and powerful bass for the size of the speaker." RD also singled out for praise the Focal's treble range, for sounding "clean and extended but not overly bright, with no empha-



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sis added to sibilants." At the other end, "double basses, bowed or plucked, were firm, not weak or exaggerated." RD added that, although "the Aria 936 couldn't match the startling dynamics of the horn-hybrid Avantgarde Uno Nano, it came surprisingly close." JA's measurements confirmed the 936's good sensitivity but found a wider low-impedance range than implied by its 8-ohm rating, thus indicating the need for a non-wimpy amplifier. Otherwise, his test results confirmed the Focal's standing as "an extraordinary value." (Vol.37 No.11 WWW)

GOLDENEAR TRITON ONE: \$4999.98/PAIR \$\$\$

Preceded in the GoldenEar line by a number of less-expensive loudspeakers, the Triton One is their new flagship: a 54"-tall tower whose cloth wrap conceals a powered, passive-radiator-loaded subwoofer system, two 5.25" midrange drivers, and, as RD describes it, "GoldenEar's version of the famed Heil Air-Motion Transformer, called a High-Velocity Folded Ribbon tweeter." Other distinctions include a fully balanced crossover, the use of DSP in the active portions of said crossover, and a 1600W internal subwoofer amp. According to RD, the Triton One performed with little strain on music played at "impress-your-friends levels," but that was far from this pony's only trick: "I could play the speakers at a low level and all the music was still there." He added, "the bass always tuneful and firm. In music that didn't reach down into the deep bass, there was no midbass emphasis to give a false impression that there was deep bass." JA's measurements confirmed the Triton One's high sensitivity, but noted an impedance-phase angle sufficiently challenging that the user "will require a good 4 ohm-rated amplifier to drive the speaker to acceptably high levels." In all, JA declared this latest GoldenEar to be "another finely engineered loudspeaker." Borderline Class A. (Vol.38 No.2 WWW)

GOLDENEAR TECHNOLOGY TRITON TWO:

\$2999.98/PAIR \$\$\$ *

Designed by industry veteran Sandy Gross and his team, and made in China, the Triton Two is a three-way floorstander with a unique array of drive-units: a High-Velocity Folded Ribbon tweeter, two 4.5" midrange cones, two 7" by 10" passive radiators, and two 5" by 9" cone woofers powered by a 1200W class-D amplifier. The speaker's slim cabinet is made of high-density Medite, features a separate subenclosure for the midrange drivers, and is covered in black cloth. Though it exhibited some box colorations when pushed too loud, the Triton Two offered sweet, detailed highs, an uncolored midrange, well-extended lows, and excellent dynamics, said RD. (Vol.35 Nos.2 & 10 WWW)

KEF Q900: \$1799.99/PAIR *

The largest model in KEF's affordably priced Q series stands 3.5' H by 14.1" W by 12.7" D, weighs almost 50 lbs, and rests on a sturdy, spiked plinth. In addition to KEF's 8" Uni-Q coaxial driver, which includes a large (1.5") tweeter with a Tangerine waveguide, the 2.5-way Q900 uses an 8" woofer and two 8" passive radiators. Though the Q900 lacked the bass impact of the larger B&W 800 Diamond, it matched a clean, detailed treble with deep, taut bass and a stable, spacious soundstage, said KR. JA noted superb measured performance, and was impressed by the Uni-Q driver's uniform dispersion. (Vol.34 No.9 WWW)

LINE MAGNETIC 755 I: \$9000/SYSTEM

Made in China, the floorstanding 755 I uses a full-range, field-coil driver-unit and comes bundled with a pair of Line Magnetic PR-3 power supplies, each of which uses a 300B direct-heated triode tube as a voltage regulator. The 755 I's decidedly old-fashioned enclosure is made entirely of lightly damped plywood; stranded copper wire is used for both the interior signal leads and the two field-coil leads, the latter soldered to a separate connector on the speaker's removable rear panel. Though it lacked treble extension, bass extension, and bass impact, the 755 I was "full of touch, impact, nuance, detail, and humanness," said AD, but cautions "for special tastes only." Placing the 755 I on a 6"-tall stand resulted in increased bass extension and improved presence and tactility, said AD. (Vol.35 Nos.9 & 11 WWW)

MONITOR AUDIO SILVER 8: \$2000/PAIR \$\$\$

The British-designed, Chinese-made Monitor Silver 8

is three-way floorstanding using a 1" vented-diaphragm dome tweeter, a 4" midrange driver, and two 6" woofers—all with diaphragms made of C-CAM, Monitor Audio's ceramic-coated aluminum-magnesium material. The MDF cabinet has separate chambers for the woofers, which are reflex-loaded. KR lauded the Silver 8 for having a "fit and finish that are probably impossible to achieve at the price without production in the Far East." He also commented on its midrange clarity, and a bottom end that, if not stygian, "was in good balance" and "remarkably solid and satisfying." And as for spatial performance, multichannel enthusiast KR wrote, "I can't say that listening in stereo via the Silver 8s was anything less than delightful." According to JA's measurements, "other than [a] slight excess of energy in the tweeter's passband, the response is impressively even and flat." He praised the Silver 8's "superb measured performance at a very competitive price." Black or White gloss finish adds \$200/pair. (Vol.38 No.1 WWW)

NOLA METRO GRAND REFERENCE GOLD:

\$33,000/PAIR

The floorstanding Metro Grand Reference Gold uses a pair of 6.5" SEAS magnesium-alloy woofers, each performing in its own rear-ported subchamber and sporting phase plugs in place of dustcaps. (The model name derives from the plugs' gold plating, claimed to damp parasitic vibrations.) The midrange and treble drivers—a 4" laminated cone and a Serbian-made aluminum-diaphragm ribbon, respectively—are fastened to an unenclosed extension of the front baffle. Copper-ribbon chokes and proprietary oil capacitors feature in the crossover, and the loudspeaker rests on a double-platform, ball-bearing isolation base, the bottom layer of which is spiked to the floor. JA noted a "generally polite, rather mellow balance" that "favored jazz and orchestral music over rock," although "well-recorded drums generally sounded excellent through the Nolas, with impressive impact and weight." On the minus side, JA described a lack of midrange clarity with some recordings, and noted that cymbals and other instruments often lacked air—an observation confirmed with dual-mono pink-noise tests. And: "At exactly 34Hz, the speaker shook—the rattle was due to the top part of the base sliding on the bearings and hitting the end stops." JA's measurements revealed uneven high-frequency performance at various listening heights and axes, and resonances in various elements of the cabinetry. His tests also suggested that the Metro Grand Reference Gold has lower sensitivity than specified, although it should otherwise be "a relatively easy load for an amplifier to drive." (Vol.37 No.11 WWW)

NOLA CONTENDER: \$3800/PAIR *

The Contender is a three-way, reflex-loaded, floorstanding loudspeaker with a 1" silk-dome tweeter and two 6.5" polymer-cone woofers. It measures 44" H by 8" W by 12" D, weighs 50 lbs, and is available in a Piano Black or Piano Cherry finish. Though it lacked some bass impact and sounded compressed when pushed too hard, the Contender impressed BJR with its rich, luscious midrange and smooth, extended treble. JA found good measured performance, but was puzzled by the complex arrangement of the speaker's bass drivers and their ports. "I can't help wondering if a more orthodox design using the same drive-units would produce greater low-frequency extension," he said. (Vol.35 No.1 WWW)

PSB IMAGINE T2: \$3498/PAIR

The Imagine T2 Tower is a slim (ca 41" H by 8" W by 13" D), five-way floorstanding with a 1" ferrofluid-cooled, titanium-dome tweeter, a 4" clay/ceramic-filled polypropylene-cone midrange driver, and three 5.25" clay/ceramic-filled polypropylene-cone woofers, each with its own internal chamber and rear-firing port. Handsomely finished in black ash, cherry, or walnut—High Gloss Black or High Gloss White add \$352/pair—the MDF cabinet is teardrop-shaped in cross section to minimize internal reflections. The Imagine T2's well-balanced, coherent overall sound included a sweet treble, a clean midrange, excellent bass, and satisfying dynamics, said RD. "An excellent speaker that offers outstanding value," he summed up. JA noted "a clean bill of measured health." (Vol.36 No.11 WWW)

REVEL PERFORMA3 F208: \$5000/PAIR \$\$\$

The new F208, from Revel's Performa3 line, is a floorstanding three-way speaker with all aluminum drivers: a 1" dome tweeter, 5.25" cone midrange, and two 8" cone woofers. The woofers are reflex-loaded through a front-mounted port with a removable resistive plug, while the tweeter fires through a newly designed, dispersion-enhancing waveguide. Sensitivity and impedance are 88.5dB/W/m and 8 ohms, respectively. The biwireable F208 includes two user controls: a tweeter-level control that works in 0.5dB increments, and a bass-contour switch with settings for Normal—for speakers positioned away from walls—and Boundary. EL was impressed with the fit and finish of the F208s, which are made in Indonesia, and had no trouble optimizing them for his small room, in which they sounded seamlessly coherent, with note fundamentals "in perfect balance with the formants and overtones" of choral music. EL welcomed the effectiveness of the treble control, without which "the tweeter did very little to hide the flaws of bad recordings," praised the untubby and well-extended bass, described the stereo imaging as "superb," and lauded the Revel's lack of compression and apparent strain, pronouncing the F208 "my new benchmark for loudspeakers at this price." Summing up his measurements, JA wrote, "In every way, this is textbook loudspeaker design." (Vol.37 No.7 WWW)

SPENDOR SP100R2: \$11,995/PAIR

(STANDS NECESSARY)

The flagship of Spendor's Classic line is a three-way, stand-mounted, reflex-ported design with a 0.8" fabric-dome tweeter, 7" polymer-cone midrange, and 11.8" Bextrene-cone woofer. Its thin-walled, mildly resonant MDF cabinet has minimal internal bracing and damping. Careful placement was required to achieve optimal bass response. Though it lacked some bottom-end tightness and impact, the Spendor matched a warm tonal balance with excellent midrange detail and articulation, good transparency and presence, and stable soundstaging, said AD. JA's measurements uncovered a number of high-level resonances. (Vol.36 No.1 WWW)

TEKTON DESIGN ENZO XL: \$2100/PAIR \$\$\$

With its three 1" ring-radiator tweeters, two 10" paper-cone woofers, and two front-firing reflex ports, the 48"-tall, US-made Tekton Enzo XL "pressurize[s] a lot more air than do most popular hi-fi loudspeakers," according to HR: "There was something unique and extremely natural about the way the Tektons projected bass energy into the room." HR also praised the Enzo XL for "piano tone, attacks, and decays [that] were always quite good," though he observed that it slightly lacked richness and substance compared to his ideal. JA's measurements suggested that the speaker was less sensitive than specified—90.6dB vs 96.5dB—adding that, even so, the Enzo XL is still usually more sensitive than average, not to mention easy to drive. "Its combination of high sensitivity and extended low frequencies is rare in speakers in this price class," JA concluded. (Vol.38 No.4 WWW)

VANDERSTEEN TREO: \$6900/PAIR \$\$\$ *

The compact (43" H by 10" W by 15" D) Treo is a four-way, reflex-loaded floorstanding with a 1" ceramic-coated alloy-dome tweeter, 4.5" tri-woven composite midrange cone, 6.5" tri-woven fiber-cone woofer, and 8" carbon-loaded cellulose-cone subwoofer. Like previous Vandersteen designs, the Treo uses a combination of sloped-back driver array and first-order crossover to produce a time-coincident wavefront launch. A black cloth grille optimizes diffraction and minimizes reflections of the high frequencies from the baffle edges. Though they could be ruthlessly revealing of overcooked modern recordings, the Treos offered excellent transparency, well-extended lows, and a clean, natural midrange, said JA, who noted respectable measured performance. (Vol.36 Nos.3 & 5 WWW)

VIENNA ACOUSTICS BEEHOTHEN

BABY GRAND-SE: \$6000/PAIR

The drivers in this three-way floorstander comprise a 1.1" hand-coated silk-dome tweeter, a 6" midrange driver made of the company's proprietary X3P polymer, and two 6" woofers made of the same transparent material, stiffened with the radial ribs that have become a Vienna Acoustics trademark. The crossover uses first- and sec-

ond-order filters at 150Hz and 2.3kHz, and at the rear of the enclosure, next to the reflex port, is a single pair of binding posts. In TJN's generously sized listening room, the Beethoven Baby Grand Symphony Editions sounded "open and airy" . . . but not at all hard." At the other end of the audioband, "bass seemed more subdued than smash-mouthed, but I never found it lacking." Overall, listening to a variety of recordings through two different front ends, TJN found that the speaker's "lively but always natural-sounding balance kept me listening to recordings long after I'd planned to move on to others." In measuring the Viennas, JA found considerably lower sensitivity than the specified 91dB, and, despite a benign electrical phase-angle curve, recommended use of a good 4-ohm-rated amp. He also found some wrinkles in the performance of the midrange driver, but observed that in this speaker's "carefully balanced design," the effects of those flaws are reduced by other factors. (Vol.38 No.1 WWW)

WHARFEDALE JADE 7: \$4199/PAIR

The largest speaker in Wharfedale's Jade line, the 7 is a four-way floorstander with a 1" aluminum-dome tweeter, a 3" upper-midrange driver with an aluminum-pulp-composite cone, a 6.5" lower-midrange with Accufibre cone, and two 8" woofers with Accufibre cones. The gracefully curved cabinet uses a modern version of the aperiodic loading developed by Wharfedale founder Gilbert Briggs and is made of Crystallam, a proprietary laminated substance designed to reduce panel vibrations and distribute resonances over a wider range. The Jade 7s produced a tonally neutral and well-balanced overall sound with excellent transparency, detail, soundstaging, and dynamics, said BD. "The Jade 7 is a speaker in the classic tradition of Wharfedale," he concluded. "It is rare to find even an expensive speaker that measures as well as this," praised JA. Add \$800 for Piano Gloss Black finish. (Vol.36 No.5 WWW)

B (RESTRICTED LF)

CANALIS ANIMA: \$3250/PAIR *

(STANDS NECESSARY)

Designed by Joachim Gerhard, the Anima is a stand-mounted, rear-ported, two-way speaker with an attractive enclosure of bamboo plywood. It has a 0.75" metal-dome tweeter and a 5" anodized aluminum-cone woofer. Driven by AVM's Evolution C8 CD receiver, the Anima produced clean, clear sound with a natural sense of space, sophisticated tonal color, and good momentum and flow, said JM. Placing the Animas on their matching stands (\$1500/pair) produced greater bass extension, a bigger soundstage, and better integration of the woofer and tweeter outputs. The Anima's slightly hot tweeter will make it a better match for mellow-sounding electronics, JA advised. Anima stands are \$1500/pair. (Original version, Vol.30 No.7 WWW; Vol.36 Nos.2 & 3; also see MF's Marantz review in Vol.33 No.4)

DYNAUDIO FOCUS 160: \$2600/PAIR *

(STANDS NECESSARY)

The Focus 160 is a small (13.8" H by 7.9" W by 11.6" D), two-way, stand-mounted loudspeaker with high-quality Dynaudio drivers: a 1.1" soft-dome tweeter based on the Esotar2, and a 6.7" mid/woofer that uses a one-piece cone of magnesium silicate-impregnated polymer. The available finishes are Walnut, Black Ash, Rosewood, Maple, and Black or White Gloss Lacquer. The Focus 160 offered a relaxed, refined, exceptionally spacious sound with extraordinary low-level resolution of ambient information, said ST. "Once again, Dynaudio has done it," he concluded. (Vol.35 No.1 WWW)

DYNAUDIO EXCITE X14: \$1299/PAIR

(STANDS NECESSARY)

Descended from the company's Excite X12, itself an RC stalwart, the Dynaudio Excite X14 is a smallish (11.2" tall), two-way stand-mount with a reflex port on the rear. Compared with its predecessor, the X14 boasts a redesigned 5.7" woofer, a more advanced coating for its 1" fabric-dome tweeter, a new crossover, and a refinement in its port tuning. The late BJR praised the X14 for a treble range that was "cleaner and more articulate in high-level passages" than that of its predecessor, and noted that he was "very impressed with the Excite X14's bass per-

formance throughout a wide range of recordings." The verdict: "Dynaudio has taken all of the aspects of the Excite X12 that I liked and improved them across the board," creating in the process BJR's "new favorite bookshelf loudspeaker for under \$2000." In his measurements, JA confirmed that the X14 is easier to drive than the X12, and pronounced the new model "a well-engineered design." The Dynaudio Excite X14 is also available in active form as the Excite X14A (\$2000/pair), wherein each driver gets its own internal 50W class-D amplifier. On the X14A's rear panel are EQ switches for adjusting the bass, midrange, and treble, plus a switchable high-pass filter for those who wish to use the X14A with a subwoofer. Using a Mytek Stereo192-DSD DAC as the source, ML found the self-powered Dynaudios to be "excellent all around, throwing out an all-encompassingly rich and physical sound." (Vol.37 No.10, Vol.38 No.9 WWW)

FALCON ACOUSTICS LS3/5A: \$2195/PAIR (STANDS NECESSARY)

In contrast to a typical ultradamped, ultraheavy, ultrabig speaker—which, according to HR, can sound an awful lot like "a moaning, wheezing pile of wood"—Falcon Acoustics' BBC-licensed LS3/5a loudspeaker proved capable of delivering "expression, transparency, [and] tonal purity." This true vintage reissue, created in part by the man who oversaw production of the KEF 127mm Bextrene-cone mid/woofer of the 1974 original, went so far as to make HR's own ca 1985 Rogers LS3/5as "sound a tad drowsy and fuzzy" by comparison. In HR's room, the Falcons loved low-powered amps—especially low-powered tube amps such as the 22Wpc Line Magnetic LM-5181A—but turned up their noses at class-D amplification. In measuring the Falcons, JA went to the well and compared his findings with measurements, made throughout his nearly 30 years at *Stereophile's* helm, of earlier LS3/5a iterations. His verdict: Falcon Acoustics "has resisted the temptation to 'improve' the sound quality, but has also managed to re-create what made the speaker great in the first place." (Vol.38 No.8 WWW)

HARBETH SUPER HL5PLUS: \$6695/PAIR

(STANDS NECESSARY)

"Like the sturgeon, the hellbender, and the woodlouse, the Super HL5plus bears an unusually strong resemblance to its prehistoric ancestor." Thus did AD put into context this most recent Harbeth: an update of the classic British box designed around two tweeters—a 1" aluminum dome and a 0.78" titanium dome—and a 7.8" mid/woofer whose cone is made from RADIAL2, the very latest version of Harbeth's proprietary polymeric composite (and the reason for the nominal *plus*). AD praised the stand-mounted Harbeth's "easy clarity" and the good degree of touch and force with which it reproduced notes in the bass range. The Super HL5plus was, he said, "somewhat more modern sounding" than its immediate predecessors. Writing from his test bench, JA noted the Harbeth's intentionally lively enclosure, yet described the speaker's measured performance as otherwise "beyond reproach." (Vol.38 No.6 WWW)

HARBETH P3ESR: \$2095/PAIR *

(STANDS NECESSARY)

The two-way, sealed-cabinet P3ESR stands just 12" tall and partners a 0.75" tweeter with a 5" woofer, the latter using Harbeth's proprietary, patented Radial2 material for improved clarity and low-level resolution. Though restricted in loudness and bass extension, the P3ESR had a slightly warm overall balance characterized by smooth highs, an uncolored midrange, and stable and accurate stereo imaging. "The Harbeth P3ESR is the best iteration yet from any manufacturer of the BBC LS3/5A minimonitor concept," concluded JA. Further evaluation by JA confirmed this speaker's uncolored midrange, smooth highs, well-defined if somewhat lightweight lows, and coherent overall sound, even when driven to high levels. The littlest Harbeth also gets the strongest recommendation from JM. While its lack of low and midbass disqualified it for most rock and large-scale orchestral performances, felt BD, the Harbeth's incredible midrange clarity and detail made it an outstanding choice for small, intimate works. Rosewood, Black Ash, Tiger Ebony, and Eucalyptus finish-

es add \$200/pair. (Vol.33 Nos.8 & 10, Vol.34 No.7 WWW)

KEF R700: \$3599.98/PAIR

The middle model of KEF's R series of British-designed, Chinese-made loudspeakers, the R700 is a 44.1"-tall floorstander in which a 5" coaxial Uni-Q driver is joined by a pair of 6.5" concave-cone woofers, all drive-units made of aluminum. The Uni-Q handles everything from 500Hz up, while the two woofers—which physically straddle the Uni-Q driver, D'Appolito-style, and are reflex-loaded with twin ports—are specified as 6dB down at 37Hz. TJN found it more daunting than usual to get the R700s to perform as specified in terms of bottom-end extension and smoothness, but eventually was rewarded with "full-bodied and boom-free" bass, the extension of which surprised him—although the very deepest tones and sound effects went missing. A "slight forwardness to voices" in most music characterized the R700s, coupled with a top-end "reticence" in which not every recording retained its natural sparkle: "The KEF R700s . . . leaned more to the forgiving than to the aggressive side, but were by no means dull." Stereo imaging was "excellent." In his measurements, JA discovered the R700 to be less sensitive than claimed—87 rather than 89dB/W/m—but described the load as benign; beyond that, he found that the R700 "demonstrates some excellent engineering expertise." (Vol.37 No.9 WWW)

PENAUDIO CENYA: \$3995/PAIR *

(STANDS NECESSARY)

Made in Finland, the CENYA is a two-way, rear-ported mini-monitor with a 0.75" tweeter and a 6" mid/woofer, both sourced from SEAS. The beautiful cabinet measures 11.2" H by 6.4" W by 12.6" D and is made of laminated birch plywood and MDF. ST achieved best results when placing the Cenyas in the nearfield, noting an especially wide, deep soundstage with pinpoint imaging. The tonal balance was "refreshingly cool" and well suited to classical and jazz, he said. (Vol.35 No.6)

POLK LSiM703: \$1498/PAIR \$\$\$ *

(STANDS NECESSARY)

This three-way, bass-reflex, bookshelf loudspeaker measures 16.75" H by 8" W by 14.5" D, weighs 29.6 lbs, and uses a 1" ring-radiator tweeter, 3.25" foamed polypropylene-cone midrange, and a 6.5" foamed polypropylene-cone woofer. The midrange driver is mounted above the tweeter in a system that Polk calls a Dynamic Sonic Engine, said to produce wide dispersion and clean transient response. The gorgeous MDF cabinets are available in real-wood cherry and mahogany veneers. Though its treble could sometimes sound a bit forward and loose, the LSiM703 had a lively, engaging sound with a detailed, uncolored midrange and a clean, authoritative bass, said BJR. JA noted superb measured performance. (Vol.35 No.9 WWW)

REVEL PERFORMA3 M106: \$2000/PAIR

(STANDS NECESSARY)

A two-way, reflex-loaded speaker intended to be bolted to a matching M stand (\$500/pair), the M106 is from Revel's Performa3 line of US-designed, Indonesian-made speakers. Its drive-units are a 1" aluminum-dome tweeter fitted with a waveguide said to improve dispersion above 8kHz—thus smoothing its frequency response and adding to the M106's detail resolution and spaciousness—and a reflex-loaded, 6.5" aluminum-cone mid/woofer. BJR: "The M106's stiff enclosure has its curved side panels formed from contiguous wood layers and is stiffened with strategically oriented bracing," and "the speaker's rear-firing port has identical flares at both ends"—to minimize compression and noise, of course. BJR said of the M106, "Its strengths impressed me across the board, especially for a speaker of its size and price," noting in particular the Revel's superb ability to articulate transients, its fine upper-bass clarity, and its low-bass forcefulness: "I found the speaker's bottom end impressive for a bookshelf model of its size." In addition to observing that "an amplifier or receiver rated at 4 ohms would probably work best with this speaker," JA noted "excellent measured performance that in turn reveals inspired audio engineering." Later in 2014, JA brought home the review pair, and compared them with a pair of the well-regarded KEF LS50: "[The] M106es did a little better when it came to separating the

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strands in [a] dense mix... [but] as much as I appreciated the Revel's transparency to recorded detail, its treble was a little unforgiving." But JA, whose room is not at all overdamped, then added: "In rooms that are larger than mine and/or more damped in the treble... the Revel M106's treble would tend to sound in better balance with the midrange." (Vol.37 No.9, Vol.38 No.1 WWW)

SONUS FABER VENERE 2.5: \$2498/PAIR

Beautifully finished in black or white lacquer, the Venere 2.5 is a compact (43.2" H by 13.3" W by 17" D), 2.5-way, reflex-loaded design with a 1.1" fabric-dome tweeter, a 7" Curv-cone mid/woofer, and a 7" Curv-cone woofer. The cabinet's sidewalls curve around to meet a very narrow rear panel just wide enough to accommodate a staggered array of four multiway terminals; the cabinet sits on a thick glass base plate that accepts four substantial spikes, the front pair nearly an inch longer than the rear, so that the entire cabinet tilts back to align the tweeter with the deeper woofer diaphragms. The sound was spacious, relaxed, and well balanced overall, with detailed mids and highs and a rich lower midrange, said KR. "The Venere 2.5 is not only provocatively sexy in appearance; it delivers," he concluded. The Venere 2.5 exhibited an exaggerated midbass on the test bench, but offered "respectable measured performance" overall, said JA. Add \$500 for walnut wood finish. (Vol.36 No.11 WWW)

SPENDOR S3/5R2: \$1595/PAIR (STANDS NECESSARY)

This updated version of Sendor's Classic S3/5se is a small (11.9" H by 6.4" W by 7.4" D), two-way, sealed-box design with a 5.5" polymer-cone woofer crossed over to a 0.9" soft-dome tweeter at a very high 4.2kHz. The S3/5R2 lacked low-bass extension and had limited high-level dynamics, but offered an exceptionally clear and coherent sound, with delicate highs, well-articulated transients, and musical bass, said BJR. Although it didn't perform appreciably better than the S3/5se, the S3/5R2 nevertheless offered respectable measured performance, said JA. (Vol.36 No.3 WWW)

STIRLING BROADCAST LS3/6: \$4495/PAIR \$\$\$ (STANDS NECESSARY)

Derived from the legendary Sendor BC1, Stirling's BBC LS3/6 is a three-way, reflex-loaded, stand-mounted loudspeaker with a 0.75" polymer-dome supertweeter, a 1" fabric-dome tweeter, and an 8.6" polymer-cone woofer. The speaker's cabinet measures 25" H by 11.75" W by 11.75" D, is available in cherry and walnut real-wood veneers (rosewood, ebony, and Zebrano add \$360/pair), and is built from three different types of board: 5/8"-thick MDF for the rear panel, 3/8"-thick MDF for the baffle, and 3/8"-thick birch plywood for the remainder. Though it lacked some physicality, bass extension, and overall impact, the LS3/6 produced a natural, compelling sound, with a good sense of space and an especially warm, rich, textured midrange, said AD: "Heartily recommended." Open-frame hardwood stands, made by Resonant Woods, add \$399/pair. (Vol.37 No.3 WWW)

STIRLING BROADCAST SB-88: \$3895/PAIR (STANDS NECESSARY)

The SB-88 is a two-way, stand-mounted loudspeaker with a 1" soft-dome tweeter and an 8" polypropylene woofer. It uses the traditional BBC thin-walled, internally braced cabinet, but with its front and rear panels glued rather than screwed on. With a convincing soundstage and a sound that was laid-back, sweet, and honest, the SB-88 always drew ST deep into the music. "The SB-88s don't wow me," he said. "They comfort me." Price is for cherry finish; ebony, rosewood, and zebrano finishes add \$400/pair. (Vol.37 No.2)

WHARFEDALE JADE 3: \$1499/PAIR (STANDS NECESSARY)

The three-way Jade 3 uses a 6.5" woofer made of a proprietary glass-fiber/carbon-fiber matrix; a 3" midrange driver of the same material, sandwiched with a thin layer of aluminum; and a 1" aluminum-dome tweeter in a sealed particleboard-and-plywood cabinet with curved sides and a claimed fundamental bass resonance of 44Hz. Used atop their purpose-made stands (\$599/pair), the Jade 3s impressed BJR in virtually every aspect of performance:

"With every recording I tried, I could find nothing to criticize in the areas of tonal balance, detail resolution, soundstaging, transient articulation, or dynamic range." JA's measurements uncovered a sensitivity of 83.5dB—lower than the specified 86dB—but a "generally benign electrical phase angle." Apart from a primary tweeter-dome resonance peak that might be audible to younger listeners, JA praised the Wharfedale's "excellent measured performance." BJR gets the last 11 words: "Wharfedale's flawless—and remarkable—Jade 3 punches way beyond its price." Dedicated stands add \$599/pair. (Vol.38 No.1 WWW)

WILSON BENESCH SERIES II SQUARE ONE: \$5195/PAIR INCLUDING STANDS

The luxuriously finished Series II Square One—JM's review samples, the fit and finish of which he described as "second to none," were clad in Ebonized Walnut Gloss—is a two-way loudspeaker whose 1" soft-dome tweeter and 7" midbass driver are augmented with a 7" rear-mounted passive radiator and two bottom-mounted vents; dedicated stands accommodate the latter via metal standoffs that nonetheless hold the enclosure rigidly in place. The claimed sensitivity is 87dB, with impedances of 6 ohms nominal and 4 ohms minimum, and bass extension down to 45Hz. JM confirmed that last spec, noting performance in his room down to 44.1Hz: "very impressive for a speaker with an internal volume of only 10 liters." He also praised the Square Ones for "remarkable depth of soundstage" and "exemplary" clarity on piano, and concluded that the speaker "absolutely deserves a very high Class B (Restricted LF) rating." In measurements conducted for his Follow-Up report, JA found a sensitivity only slightly less than spec, plus "well-controlled horizontal dispersion, and clean decay in the treble." But he also uncovered a response peak between 3 and 7kHz, and suggested that the Series II Square One will sound best when the listener's ears are between 5° and 10° below the tweeter axis. (Vol.38 Nos. 8 & 9 WWW)

C (FULL-RANGE)

DIRECT ACOUSTICS SILENT SPEAKER II: \$898/PAIR *

Designed by Winslow Burhoe and available by mail-order only, the two-way, floorstanding Silent Speaker II is a wide, rectangular box whose top panel is raked at an angle of about 22° and holds a 6.5" woofer and a 1" soft-dome tweeter. Available in modest black ash (maple adds \$100/pair) and with a dated, DIY appearance, the Silent Speaker II measures 22" H (front) by 25" H (rear) by 13.5" W by 9" D. Although particularly sensitive to associated electronics, the Silent Speaker II had outstanding bass and a coherent overall sound. "I could live with these speakers," decided JM. For optimal performance, they *must* be used with their grilles in place, he advised. "A very well-balanced design at an affordable price, with a totality of performance that exceeds the sum of its parts," praised JA. (Vol.34 Nos.6 & 7 WWW)

WHARFEDALE DIAMOND 10.7: \$1299/PAIR *

Available in three handsome finishes (Blackwood, Cinnamon Cherry, Quilted Rosewood), the Diamond 10.7 is a compact (37.6" H by 8.7" W by 11.7" D) three-way, reflex-loaded floorstander. Its cabinet has curved sidewalls and a piano-black front baffle on which are mounted the four drive-units: a 1" soft-dome tweeter, a 2" dome midrange unit, and two 6.5" woven-Kevlar-cone woofers. Though it lacked some high-frequency detail and extension, the Diamond 10.7 had a warm, rich midrange and deep, natural bass that made music especially involving, said BJR. "The Diamond 10.7 is an impressive speaker that provides many of the attributes of pricier floorstanders in an attractive, small-footprint cabinet at an accessible price," he concluded. Similarly, JA noted "excellent measured performance for the price." (Vol.36 No.10 WWW)

C (RESTRICTED LF)

ADAM AUDIO A3X ACTIVE: \$658/PAIR (STANDS NECESSARY)

From the pro-audio line of ADAM Audio GmbH comes the A3X active loudspeaker, a front-ported reflex design that uses a 4.5" carbon-fiber mid/woofer alongside ADAM's

proprietary X-ART (for eXtended Accelerating Ribbon Technology) tweeter, the latter based on the famous (among audiophiles) Heil air-motion transformer. Each driver has its own dedicated 25W class-A/B amplifier, and both RCA and XLR inputs are provided on the rear panel of the enclosure, which ML described as "ruggedly handsome." He was especially impressed with the AD-AMs' "excellent dispersion characteristics" when used with his PonoPlayer, noting that the A3Xes "were capable of sounding as if the music they were playing was being made directly inside my head—like headphones, only better." (Vol.38 No.9 WWW)

ATC SCM7 V.3: \$1749/PAIR (STANDS NECESSARY)

ATC's entry-level model is a small (11.8" H by 7.9" W by 9" D), two-way, stand-mounted speaker with a 1" soft-dome tweeter and a 5" mid/woofer. Unlike previous ATC models, the SCM v.3 has side panels that curve toward the rear, and its drivers are now flush-mounted in a fully veneered front panel. The sealed cabinet is available in handsome cherry and black-ash veneers. Claimed specifications include a lowish 84dB sensitivity and a flat nominal impedance of 8 ohms. Though it lacked low-end impact and resolution, the SCM v.3 produced an engaging overall sound marked by pinpoint imaging, excellent detail retrieval, and well-extended highs, said JM. On the bench, JA observed sensitivity even lower than that specified by ATC: 82 vs 84dB/2.83V/m, redeemed somewhat by impedance and electrical phase-angle curves that describe a benign load. JA was impressed by the SCM7 v.3's measured performance overall, noting that this British minimonitor "will sound best when the listener sits relatively close to it." (Vol.37 Nos.2 & 4 WWW)

AUDIENCE CLAIRAUDIENT THE ONE: \$995/PAIR (STANDS NECESSARY)

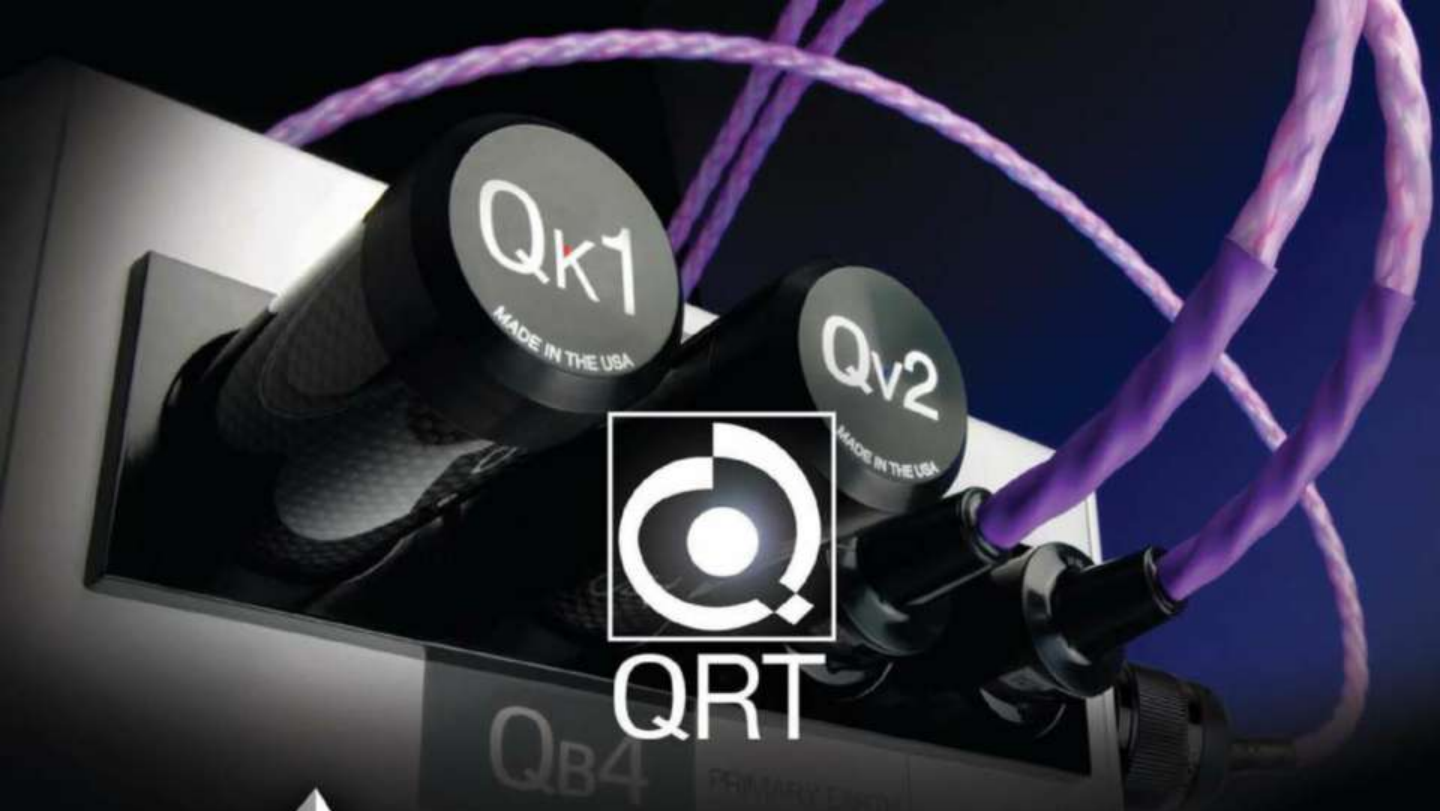
The ClairAudient The One is a very small (7" H by 5.5" W by 7" D) desktop speaker with a single 3" titanium-alloy drive-unit loaded by a 4" rear-mounted passive radiator. It has a single pair of binding posts and is internally wired with Audience's Ohno continuous-cast monocrystal wire. Though they lacked ultimate bass extension and couldn't go very loud when used in free space, the Ones had a revealing and involving overall sound, with superb resolution of detail, excellent dynamic contrasts, and subtle articulation of transients, said BJR. To achieve the most neutral balance, the speaker should be used in close proximity to a boundary, such as a desktop, advised JA. Class B, recommended BJR; JA demurs, feeling Class C is more appropriate. Matching stands add \$75/pair. (Vol.36 No.9 WWW)

AUDIOENGINE 5+: \$399/PAIR \$\$\$ * (STANDS NECESSARY)

The Audioengine 5 powered speakers come packed in attractive cloth drawing bags, and include several convenient accessories: an AC power cable, miniplug interconnects in length of 2m, an RCA cable (2m), a 3.75m length of simple speaker cable, and a remote control. Each A5 cabinet is made of 25mm-thick MDF, measures 10" H by 7" W by 7.75" D, and houses a 20mm silk-dome tweeter and a 5" Kevlar-cone woofer. The left speaker enclosure contains a 50Wpc dual class-AB monolithic amplifier, as well as the power button, volume knob, iPod charging port, and IR window for the remote. Compared to the PSB Alpha B1, the Audioengine lacked some high-frequency detail and delicacy, but offered outstanding bass control, transparency, and drama, said SM. Price is for satin black and high-gloss white finishes; bamboo adds \$70. (Vol.34 No.5 WWW)

DALI ZENSOR 1: \$495/PAIR \$\$\$ * (STANDS NECESSARY)

The Zensor 1 is a very small (10.7" H by 6.3" W by 8.6" D), two-way, rear-ported bookshelf design with a 25mm fabric-dome tweeter and a 5.25" pulp-cone woofer. Its MDF cabinet is available in light-walnut or black-ash vinyl; the front baffle is finished in high-gloss black or white lacquer. Though the Zensor 1's upper bass was sometimes "a bit thumpy," the speaker's overall sound was surprisingly detailed and natural, with sophisticated highs, a rich, warm midrange, and a remarkable sense of pacing, said BJR. "This attractive little baby sets a new benchmark in




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its class," he concluded. JA noted impressive measured performance. (Vol.35 No.7 WWW)

EMOTIVA AUDIO PRO AIRMOTIV 4S: \$299/PAIR \$\$\$ (STANDS NECESSARY)

Designed in the US, made in China, and sold direct from the manufacturer, the Emotiva Pro Airmotiv 4s was designed for pro-audio applications—the plain-gray styling is a giveaway. This two-way, reflex-loaded, self-biamped loudspeaker stands only 9.25" high and weighs slightly more than two bags of sugar. Its tweeter is a 1" by 1.25" ribbon, its woofer a 4" plastic-composite cone, its internal electronics a pair of 25W class-A/B amplifiers with toroidal transformers and good-quality parts. BJR pressed the Pro Airmotiv 4s into domestic service on a pair of 24"-high stands and was impressed. He praised the Emotiva's "dead-pure midrange," the "clarity, extension, and [lack of] coloration" in its trebles, and the "pounding clarity" of its "amaz[ingly]" well-extended bass range—and bought the review pair. In his measurements, JA pointed to the Pro Airmotiv's "smooth, even" farfield response and "impressively clean" cumulative spectral-decay plot. (Vol.38 No.4 WWW)

GOLDENEAR TECHNOLOGY AON 2:

\$799.98/PAIR \$\$\$ (STANDS NECESSARY)

This small (12" H by 8" W by 10" D) two-way, stand-mounted loudspeaker has an unusual driver complement: a 1.06" by 1.31" High-Velocity Folded Ribbon tweeter, a 6" polypropylene-cone woofer, and two 6.5" side-mounted planar passive radiators. The cabinet is a truncated pyramid with a wraparound black grillecloth and a piano-gloss black topcap. Though it lacked some bottom-end slam, the Aon 2 had a coherent overall sound, with clean, well-extended highs, lightning-fast transients, and a warm, rich midrange, said BJR. "GoldenEar has produced a stunning achievement in the Aon 2, with strengths that are unusual for a bookshelf speaker of this size and price," he concluded. The Aon 2 revealed an upper-midrange peak on the test bench, but otherwise measured well for its price, said JA. (Vol.36 No.11 WWW)

MAGNEPAN .7: \$1400/PAIR \$\$\$

Magnepan's .7 panel-magnetic or "quasi-ribbon" loudspeaker is a two-way panel design that measures just over 54" high and 15" wide. The manufacturer's specs include a 4-ohm nominal impedance, sensitivity of 86dB, and bass extension down to 45Hz. Used on their own, especially when driven by Rogue Audio's 100Wpc Sphinx integrated amplifier (\$1295), the .7s delighted HR with their "microdetail, transient attack, transparency, and soundstaging," but could also sound "a little bass shy." But when augmented with a pair of Magnepan's DWM bass panels (\$795 each), the combination of .7 speakers and Sphinx amp delivered "disarmingly big, robust, vivid, and extremely tactile" sound with plentiful, "authentically toned" bass. "These Maggies did slam," HR declared, adding that he'd never enjoyed Led Zeppelin II more than through this system. Class B, felt HR; Class C decided JA. (Vol.38 No.8 WWW)

OPERA MEZZA 2012: \$1500/PAIR (STANDS NECESSARY)

Made in Italy, the Opera Mezza 2012 is an attractive two-way minimonitor with wood-veneered side panels and a faux-leather front baffle. It uses a 5.5" treated-paper-cone mid/woofer from SEAS and a 1" Scan-Speak soft-dome tweeter. Though it seemed to struggle a bit with large-scale music played at high volumes, the Mezza 2012 combined a sweet midrange with a crisply articulated treble for a sound that best complemented chamber music and small-group jazz, said ST. (Vol.36 No.5)

PHASE TECHNOLOGY PC60 CA: \$1400/PAIR ★ (STANDS NECESSARY)

A reissue, with new drivers and crossovers, of Phase Technology's classic PC-60 of the 1980s, the PC60 CA is a small (13.25" H) sealed-box loudspeaker with a 1" soft-dome tweeter and a 6.5" solid-piston woofer made from a trilaminate of Kevlar, glass fiber, and a material the company refers to as RPF. The PC60 CA's sensitivity and impedance are respectively specified as 87dB/W/m and 4 ohms, and the center frequency of its Absolute Phase Crossover—a design intended to preserve the drivers'

optimum dispersion characteristics—is 2kHz. Used atop BJR's sand- and lead-shot-loaded Celestion Si stands, the Phase Techs impressed him with their "flawless articulation of transients," their "ability to render hall sound and high-level dynamic contrasts without strain," and a degree of "transparency in the lower midrange [that] made [them] a natural showcase" for some of his favorite jazz recordings—although the PC60 CAs were not shy about communicating the upper-midrange/lower-treble flaws of some recordings. Apart from uncovering a resonance problem in the speaker's crossover region that may contribute to its lack of grace with bright recordings, JA declared the PC60 CA "a well-engineered little speaker." (Vol.37 No.7 WWW)

PSB IMAGINE MINI: \$759/PAIR ★

(STANDS NECESSARY)

Measuring just 9.25" H by 5.75" W by 8.3" D and weighing 6.5 lbs, the Mini is PSB's smallest, least expensive Imagine model. It marries the 1" ferrofluid-cooled, titanium-dome tweeter used in other Imagine models to a 4" clay/ceramic-filled polypropylene-cone woofer. The tiny cabinet, available in satin-finish wood veneer or high-gloss black or white (add \$70/pair), has a curved top panel and sidewalls; the baffle is finished in matte black. The Mini sacrificed ultimate loudness and low-frequency extension for high-frequency purity, a clean midrange, and a wide, stable soundstage, said JA. The Mini's measured performance was "almost beyond reproach." The matching PFS-27 stands cost \$300/pair. Price is for Walnut, Dark Cherry, and Black Ash Veneers. High Gloss Black or High Gloss White adds \$70/pair. PWB-1 Wall Bracket is \$99. (Vol.35 No.8 WWW)

SONUS FABER VENERE 1.5: \$1198/PAIR

(STANDS NECESSARY)

The Venere 1.5 is a two-way, front-vented, biwireable bookshelf speaker measuring 15.4" H by 8" W by 11.7" D and weighing 13.2 lbs. It uses a 1.25" silk-cone tweeter with a conical waveguide and a 6" Curv-cone mid/woofer. Like the larger Venere 2.5, the 1.5 has a beautifully finished, internally braced cabinet whose sidewalls curve around to meet a very narrow rear panel just wide enough to accommodate a staggered array of four multiway terminals. Though it lacked high-frequency sparkle and exhibited a slightly elevated upper bass, the Venere 1.5 produced a natural, dynamic, and involving overall sound, with a detailed midrange and delicate highs, said BJR. Price is for black or white high-gloss lacquer finish; real-wood walnut veneer adds \$300/pair. Matching stands add \$398/pair. Borderline Class B overall. (Vol.37 No.1 WWW)

TANNOY REVEAL 402: \$560/PAIR

(STANDS NECESSARY)

The Tannoy Reveal 402 active loudspeaker mates a 4" high-sensitivity mid/woofer with a 3/4" soft-dome tweeter—the latter nominally warranted as "Poke-Resistant"—for a claimed frequency response of 56Hz–48kHz. Each lucky driver gets its own internal 25W amplifier, and the lucky owner gets a volume control, adjustable EQ settings, a minijack for use with a portable music player, and RCA and XLR input jacks. When fed from the similarly inexpensive iFi nano iDSD DAC, the Tannoy's impressed ML as "damn fun to listen to." (Vol.38 No.9 WWW)



APERION VERUS GRAND BOOKSHELF:

\$699/PAIR (STANDS NECESSARY)

The Verus Grand Bookshelf is a two-way, bass-reflex, stand-mounted design with a 1" silk-dome tweeter and a 5" woven-Kevlar woofer with an aluminum phase plug. The beautifully finished cabinet features curved side panels and internal bracing to minimize standing waves. Fit and finish were outstanding. Though it lacked some high-level dynamic slam, the Aperion offered a well-balanced overall sound with airy highs, a detailed midrange, clean bass, and good sense of space, said BJR. JA noted superb measured performance. All Aperion products are offered with a 30-day money-back guarantee, free shipping, a 10-year warranty, and a trade-in program. (Vol.36 No.1 WWW)

AUDIOENGINE A2+: \$249/PAIR \$\$\$

(STANDS NECESSARY)

At the end of 2013, Audioengine replaced the A2 (\$199/pair) with the A2+, the only apparent differences being that the latter costs \$50/pair more and, per JA, "adds to the left, master speaker a USB 1.1 input for digital audio and a pair of output jacks, used to feed an unfiltered, un-equalized signal to the subwoofer(s)." JA compared the new speaker with its predecessor, confirmed that they sounded "identical," and added, "I was impressed by how well these tiny speakers managed to fill my listening room with sound." His new measurements noted that "the A2+'s farfield response . . . is identical to the A2's." He concluded, "A heck of a speaker at a heck of a price!" (Vol.37 No.9, Vol.38 No.4 WWW)

BOSTON ACOUSTICS A 25: \$298/PAIR ★

(STANDS NECESSARY)

The two-way A 25 measures 10.7" H by 7.25" W by 8.9" D, weighs 10 lbs, and uses Boston's 1" Kortec soft-dome tweeter and a 5.25" mid/woofer with a cone of ceramic and glass-fiber polymer. It has scratch-resistant, high-gloss side panels; all other surfaces are covered in a textured veneer reminiscent of faux leather, giving the A 25 a purposeful, no-nonsense look. Though it lacked the PSB Alpha B1's drama and scale, the A 25 offered a balanced, coherent sound with impressive top-to-bottom control and stable stereo imaging. "The A 25 had a fine way of balancing accuracy and musicality for an enriching and fatigue-free listening experience," said SM. JA noted excellent measured performance. (Vol.34 No.11, Vol.35 No.3 WWW)

DEFINITIVE TECHNOLOGY STUDIO MONITOR

55: \$598/PAIR (STANDS NECESSARY)

This two-way, biwireable, stand-mounted design uses a 1" aluminum-dome tweeter, a 6.5" BDSS cast-basket mid/woofer, and, instead of a reflex port, an unusual top-firing, 6" by 10" passive radiator. Fit and finish were superb. The SM55 lacked high-frequency delicacy and sophistication but produced a clean midrange, well-defined midbass, and outstanding high-level dynamics, said BJR. Though its test-bench results indicated weighty low frequencies for a bookshelf model, the SM55 was not as well balanced overall as the smaller and more affordable SM45, felt JA. (Vol.35 No.11 WWW)

DEFINITIVE TECHNOLOGY STUDIO MONITOR

45: \$398/PAIR (STANDS NECESSARY)

Made in China, the two-way, rear-ported 45 is the smallest and least expensive model in DefTech's revamped Studio-Monitor series. It measures 11.7" H by 6.75" W by 11.7" D and has a 1" aluminum-dome tweeter and a 5.25" mid/woofer, the latter utilizing DefTech's new Linear Response Waveguide for wide dispersion and smooth off-axis frequency response. The matte-black wood-grain enclosure has tapered side panels and a contoured, high-gloss baffle to minimize diffraction. Fit and finish were outstanding. Though they lacked some bass weight and impact, the DefTechs combined natural transient articulation, well-controlled lows, impressive dynamics, and stable stereo imaging for a compelling listening experience, said SM. High Class D, bordering on Class C. Other than its lively enclosure and two very strong port resonances, at 700 and 910Hz, the SM 45 measured very well for an inexpensive speaker, said JA. (Vol.35 Nos.8 & 10 WWW)

MUSIC HALL MARIMBA: \$349/PAIR

(STANDS NECESSARY)

Music Hall's only loudspeaker is a small (11" H by 6.5" W by 8.75" D), two-way, reflex-loaded design with a 1" silk-dome tweeter and a 5.25" polypropylene-cone mid/woofer. The MDF cabinet is internally braced to minimize vibrations, has curved edges to reduce diffraction, and is finished in modest black vinyl. Though dynamically limited, the Marimbas were extremely room-friendly, with outstanding imaging and soundstaging abilities, said ST. "The Marimba is an astonishing little speaker," he concluded, "as long as you don't expect it to do too much." Compared with PSB's Alpha B1s, the Marimbas had more crisply articulated highs and produced smaller, more tightly focused images on a wider soundstage, said SM, concluding "Super fun, with great imaging and soundstaging, but a bit too hot on top." JA was impressed by the Marimba's measured performance. "An honest loudspeaker offering

honest performance at a very competitive price," he said. (Vol.35 No.12; Vol.36 Nos.6 & 7 WWW)

**PIONEER SP-BS22-LR: \$129.99/PAIR \$\$\$
(STANDS NECESSARY)**

The SP-BS22-LR is a two-way, bass-reflex bookshelf model with a 1" soft-dome tweeter, a 4" woofer with a structured-surface cone, and a sophisticated six-element crossover network. Its cabinet has gently curved sidewalls and is finished in black wood-grain vinyl. The Pioneers lacked some extension on top and bottom, but had a rich midrange and exhibited excellent detail resolution, transient articulation, and reproduction of ambience, said BJR. Compared with the Music Hall Marimbas, the Pioneers produced fleshier images and smoother, gentler highs; compared with the PSB Alpha B1s, the Pioneers were more transparent and had better image focus but lacked some bass impact, said SM. (Vol.36 Nos.7 & 9 WWW)

**POLK AUDIO RT/A3: \$399.95/PAIR ★
(STANDS NECESSARY)**

The two-way, stand-mounted RT/A3 measures 14.75" H by 8.58" W by 14" D, has a 1" silk-dome tweeter and a 6.5" polymer-composite woofer, and is available in real-wood veneers of black ash or cherry. It employs Polk's Power Port, a system in which two ports work together to reduce noise and distortion for clean, powerful bass. Though the RT/A3's fast, detailed highs could be unforgiving of poorly recorded material, the speaker's muscularity, weight, and solidity complemented well-recorded rock music. Compared to the DefTech SM 45, the Polk produced a bigger, more aggressive overall sound, but lacked the DefTech's transient articulation, detail, and delicate touch, said SM. Despite the Polk's lively cabinet, JA noted "excellent audio engineering at an affordable price." (Vol.35 Nos.7 & 8 WWW)

**PSB ALPHA B1: \$299/PAIR \$\$\$ ★
(STANDS NECESSARY)**

The unassuming B1, the latest version of PSB's best-selling Alpha speaker, has molded plastic front and rear baffles connected by an MDF sleeve, and combines a 5 1/4", injection-molded, polypropylene-cone woofer with a 3/4" ferrofluid-cooled, aluminum-dome tweeter, both sourced from India. Low-bass extension was limited, and the speaker's otherwise clean, clear bass tone became muddled at very high volumes. Though high frequencies were slightly veiled, the B1's midrange was superb. JA was most impressed by the Alpha's talent for orchestral music: "If you are a classical-music lover with a small room and an equally small budget, a pair of PSB's Alpha B1s is just what you need/Extraordinary value." Though the B1s lent more drama to bass and drums, they couldn't quite match the Paradigm Atom v.5's treble performance, felt WP. JA feels the PSB's treble to be more naturally balanced, however. One of SM's long-term references. Compared to the Wharfedale Diamond 10.1, the PSBs exhibited a more forward balance, occasional brightness in the mid-treble, grittier brass textures, and a slight lack of overall clarity, found SM. (Vol.30 Nos.5 & 9, Vol.34 No.4 WWW)

PSB ALPHA PS1: \$299/PAIR

The Alpha PS1 is a small (8" H by 4.5" W by 7" D), two-way, powered desktop loudspeaker with an attractive gloss-black cabinet. It has a 0.75" aluminum-dome tweeter and a 3.5" metallized polypropylene-cone woofer with an oversized magnet and rubber surround; a slotted rear port is tuned for enhanced bass response. The left-channel speaker contains a 20Wpc amplifier and provides several useful connections: a single pair of RCA inputs, a 3.5mm Aux input, a subwoofer output, a 5V USB power port for charging mobile devices or powering a WiFi dongle, and a 24V DC input. The PS1s produced a surprisingly large and full-bodied sound, with clean highs and an open, uncolored midrange, said SM, who bought the review samples. (Vol.36 No.7 WWW)

**SJÖFN HIFI (THE CLUE): \$999/PAIR
(STANDS NECESSARY)**

A perennial attraction at audio shows, Sjöfn's idiosyncratic The Clue is a small, stand-mounted, reflex-loaded speaker designed to be placed near room boundaries. It has a 0.875" silk-dome tweeter and a 5.5" plastic-cone woofer, and boasts a sensitivity of 87dB/W/m and a nominal impedance of 6 ohms. Stands ranging in height from

19" to 22" are recommended. HR auditioned a variety of records through the Sjöfns, and had strong praise for their "smooth and seamless" upper mids and lower treble range: Their speed and definition were impressive. But an apparent discontinuity in The Clue's upper-bass response resulted in a lack of weight and body in many vocal and instrumental sounds. In the end, HR expressed frustration: "I couldn't find a way to really enjoy my listening time while The Clues were in the system." JA's measurements confirmed the speaker's specified sensitivity, but suggested that The Clue's nominal impedance went a bit lower than 6 ohms. (Vol.38 No.1 WWW)

**TANNOY MERCURY V1: \$382/PAIR ★
(STANDS NECESSARY)**

Designed in the UK and made in China, the two-way, front-ported Mercury V1 measures 11.8" H by 6.7" W by 10" D, weighs 9.9 lbs, and has a 1" soft-dome tweeter and a 5.1" pulped paper-cone mid/woofer. The cabinet is available in handsome Dark Walnut and Sugar Maple finishes. Build quality was excellent. Lacking some bass weight and impact, the Mercury V1 had a slightly polite overall sound with an especially sweet, sophisticated treble; a detailed, uncolored midrange; and nicely balanced, well-controlled bass, said SM. Other than an upper-midrange peak in its on-axis farfield response, the Mercury V1's measured performance was commendable, said JA. "I still miss these speakers," bemoans SM. (Vol.35 Nos.9, 10, & 11 WWW)

**WHARFEDALE DIAMOND 10.1: \$349/PAIR ★
(STANDS NECESSARY)**

The Diamond 10.1 is a simple, two-way, stand-mounted design with a 1" soft-dome tweeter, a 5" Kevlar-cone mid/bass driver, and two rear-firing ports. Its gorgeous cabinet is gracefully curved, widening at the center and tapering toward the rear to both minimize internal standing waves and enhance the speaker's fine appearance. The Diamond 10.1 had a relaxed, coherent overall sound, with a wide, deep soundstage, airy highs, a liquid midrange, and excellent low-level resolution. Compared to the PSB Alpha B1, the Wharfedale lacked transient speed but offered greater clarity and resolution, said SM. BJR was impressed by the Wharfedale's extended highs, detailed midrange, and clean bass. "The 10.1 presents extraordinary value for money," he concluded. Compared to the Pioneer SP-BS22-LR, the Wharfedale had a warmer overall sound with more delicate highs and a richer midrange, but lacked the Pioneers' image focus and clean attack transients, said SM. "The Wharfedale Diamond 10.1 remains my favorite affordable stand-mounted loudspeaker," he concluded. "For the price, I'm not sure you can do better." JA noted superb measured performance. (Vol.34 Nos.2, 4, & 10; Vol.36 No.10 WWW)

E

**DAYTON AUDIO B652: \$39.80/PAIR
(STANDS NECESSARY)**

The least expensive loudspeaker *Stereophile* has ever reviewed, Dayton Audio's B652 is a very small (11.8" H by 7" W by 6.5" D), very light (5.8 lbs), two-way, sealed-cabinet design with a 0.6" ferrofluid-cooled polycarbonate-dome tweeter and a 6.5" polypropylene-cone mid/woofer. The simple MDF cabinet is clad in black vinyl and has a removable grille of black cloth. Though it lacked overall clarity, extension, and control, the B652 offered a surprisingly large soundstage, good image separation, and a very fine sense of momentum and flow, with no hint of temporal distortions, said SM. Given its low price, the B652's measured performance was "quite remarkable," said JA. Dayton Audio B652-AIR (\$59.80/pair) replaces the dome tweeter with a folded-ribbon unit and was also impressive. "Recommended for those looking for the least-expensive way to share our enthusiasm for recorded music," JA summed up. (Vol.36 No.1, original WWW; Vol.38 No.2, AIR WWW)

URBAN FIDELITY LOUSPEAKER: \$399/PAIR

Designed and made in Los Angeles and launched with the help of the Kickstarter crowdfunding website, the Urban Fidelity loudspeaker is a single-driver, crossover- and cabinet-free floorstander whose front panel features designs from independent visual artists. With its base in place, the speaker measures 41" H by 13" W by 13" D. The

speaker's body is made from North American-sourced, formaldehyde-free wood, while the artwork is reproduced with water-based inks. The 8" drive-unit, made for UF by a US-based company, combines a low-frequency cone and high-frequency whizzer in a frame of cast aluminum. The review sample, featuring Liam Brazer's Country design, was gorgeous. While the UFs created an impressively large, stable soundstage with well-focused images and had a fast, clean overall sound, they were lean in the lower mid-range, lacked bass impact, and added to voices a "cupped-hands" coloration that sometimes detracted from his enjoyment of the music, said SM. (Vol.37 No.1 WWW)

K

Meridian DSP7200, PSB Imagine T3, Sony SS-NA5ES, Vandersteen Model Seven Mk.2, GoldenEar Triton Five.

DELETIONS

B&W 800 Diamond and 804 Diamond, Vandersteen Model Seven, all replaced by new models; Swissonor B.A.C.H. 8e not currently available in the US; ADAM Audio Classic Column Mk3, Audio Note AN-E/SPe HE, Energy CB-10, Linn Majik 140, Revel Ultima Salon2, Sonus Faber Amati Futura and Guarneri Evolution, Sony SS-AR1, Terosonic Magus, Totem Dreamcatcher, all not auditioned in a long time.

SUBWOOFERS

A

B&W DB1: \$4500 ★

The DB1 is a powered subwoofer in a handsome sealed enclosure measuring 19.3" H by 18.1" W by 16.2" D and weighing 97 lbs. Its solid construction includes: two mechanically opposed 12" woofers separated by a partially open internal partition, 1"-thick walls of MDF with 3/4"-thick bracing panels to minimize vibrations, digital signal-processing circuits to run its menu-based control system, home automation capability, and a 1000W switching amplifier equalized to produce linear output. Also included are a calibration microphone, four connector cables, and a USB-connected soundcard for use with the DB1's Room Acoustics Compensation program. Setup was quick and easy. Though it lacked the pitch definition of JL Audio's Fathom f113, the DB1 blended seamlessly with LG's Quad electrostatics, and produced powerful deep bass and impressive room lock. "The B&W DB1 proved to be a real pocket rocket," he said. (Vol.35 No.2 WWW)

JL AUDIO FATHOM F113: \$4300 \$\$\$ ★

The f113 is a small, sealed cube featuring a 13" drive-unit with a prominent OverRoll surround that permits huge cone excursions. All controls and connections for JL Audio's Automatic Room Optimization are conveniently located across the front of the sub, beneath the removable grille. Setup was simple and sophisticated. "Small as it is," said KR, "the f113 makes a powerful and musical contribution to the bottom end, even in the context of an already full-range system." "Remarkably powerful and clean by any standards, it is all the more so considering its compact dimensions," he sums up. When passing his system's low-end signal to the f113 below 80Hz, KR also noted "a dramatic expansion of the entire soundstage." Though installing two f113s in his system required more care and time than LG had anticipated, the improvements in soundstaging and deep-bass reproduction were worth the effort. "My entire system achieved its best performance to date," he said, also noting that the JL Audio's Automatic Room Optimization circuit enabled him to tune out an annoying 50Hz mode in his room acoustics. (Vol.29 No.11, Vol.30 Nos.5 & 9 WWW)

JL AUDIO FATHOM F212: \$6700 ★

The ruggedly built Fathom f212 is a powered, sealed-box sub with two 12" cone woofers. It measures 32" H by 15" W by 20" D, weighs 220 lbs, and has an effective cabinet volume of 574 cubic inches. Like the smaller Fathom f113, the f212 provides an automatic internal room optimizer for single-band adjustments, but lacks a high-pass filter. With

its clean, well-defined low bass and outstanding three-dimensionality and soundstaging performance, the f212 delivered the full intensity and emotional impact of music, said LG. "The Fathom f212 has raised the performance quality of my audio system, and my enjoyment of it, to much higher levels," he concluded. (Vol.33 No.4 WWW)

MARTINLOGAN BALANCEFORCE 212: \$3995

The two 12" aluminum-cone woofers of the 212 are mounted on opposite sides of their enclosure and operated in opposition to one another—an approach for which MartinLogan has coined the term BalancedForce. Power comes courtesy an internal pair of 850W class-D MOSFET amplifiers, themselves addressed with a choice of balanced and unbalanced connectors for left-channel, right-channel, and LFE (low-frequency effects) operation. Controls include continuously variable knobs for level, low-pass filter (30–80Hz), and phase (0–270°), plus an On/Off switch with a third choice for power-saving Auto mode, which detects an incoming signal and powers up the system accordingly. JL used two 140-lb BalancedForce 212s with his own MartinLogan Prodigy loudspeakers, and was impressed with the results—especially with the newly remastered Led Zep catalog: "Kick drum and bass were tuneful and heavy . . . yet there was no sense of bloat or bass 'effect,' and the tonal balance from top to bottom just felt right and real." The only performance negative: the audible clacking of the system in Auto mode. Perfect Bass Kit costs \$100. (Vol.37 No.10 WWW)

PARADIGM REFERENCE SUB 15: \$3499 ★

The SUB 15 has a 15" drive-unit with a 76mm-diameter voice-coil, and is rated for bass extension down to 12Hz. Considerably more attractive than the austere Paradigm Reference Servo-15, the SUB 15 has outrigger feet, gracefully tapered side panels, and weighs 114 lbs. It accepts balanced and unbalanced RCA input signals, and offers a trigger input, adjustable low-pass filter, phase adjustment, and a USB port for control of its equalizer. Compared to the Servo-15, the SUB 15 produced a flatter, more extended bass response with a smoother upper end, allowing it to more readily "disappear" as a discrete sound source. "The SUB 15 offers all the powerful bass and extension needed for any music and, indeed, for home theater, unless you're a bass maniac," said Kal. Add \$300 for Piano Black finish. (Vol.33 No.1 WWW)

REVEL ULTIMA RHYTHM2: \$10,000

How does one approach a subwoofer that weighs just under 200 lbs, has an 18" cast-frame woofer with dual 4" voice coils, is driven by an internal pair of 1000W class-D amplifiers, and outsizes, by nearly 3 cubic feet, its manufacturer's previous flagship model? With the utmost respect—as did LG when he closed in on the stygian, stentorian, and altogether big Revel sub. His opinion: "The Revel Ultima Rhythm2's musicality and power are exceptional, with a unique ability to deliver a powerful performance in a large listening room. Its deep bass has tremendous weight and slam, yet can turn on a dime." LG also praised the Revel's brace of manual user controls and the woofer's user-installable automatic Low Frequency Optimization (LFO) program, but chafed slightly at having to download the software, the user manual, and the associated test signals: "For this nosebleed price, one could argue that Revel should include a printed LFO instruction manual, a USB cable, and an iTestMic, if not an individual optimization by [the designer]." (Vol.38 No.2 WWW)

VELODYNE DD-18+: \$5799

The DD-18+ is a powered, sealed-box subwoofer; its 18" forward-firing driver has a fiberglass Rohacell-laminate cone, a 3" voice-coil, and a 39.7-lb magnet. Compared to the original DD-18, the 18+ is 6.5" deeper, 19 lbs heavier, has 28% more internal volume, uses a more efficient amplifier, and features strongly tapered side panels. In addition, the DD-18+ equalization software provides automated room compensation and controls drive-unit distortion using a servo-loop accelerometer. Despite a daunting number of features, controls, and options, setup was simple. The DD-18+ played the deepest bass passages with minimal distortion, low coloration, and outstanding pitch definition, said LG. "Solid Class A," he concluded. (original version, Vol.27 No.6 WWW; Vol.36 No.3 WWW)

B

BRYSTON 10B-SUB CROSSOVER: \$3595 ★

The 10B features three balanced configurations—stereo two-way, monophonic two-way, and monophonic three-way—and proved extraordinarily versatile in managing crossover slopes and frequencies. LG heard no electronic edginess and noted only the slightest loss in soundstage depth. "I found the 10B-SUB's sound clear, transparent, and neutral—as good as I've ever heard from an outboard crossover." (Vol.18 No.5, Vol.28 No.11 WWW)

SVS SB13-ULTRA: \$1599.99 \$\$\$

Weighing less than 100 lbs—a noteworthy accomplishment for a good subwoofer, per LG—the sealed-box SB13-Ultra is a compact (17") cube containing a 13.5" ferrite-magnet driver and a 1000W Sledge class-D amplifier. The SB13-Ultra lacks a remote control, offering instead a single-knob Integrated Function Controller next to its small LCD screen and balanced (XLR) and unbalanced (RCA) inputs and outputs. SV Sound offers, on their website, an automated setup advisor (called Merlin) that LG found helpful in integrating the sub with his Quad ESK-989 electrostatic panels. His verdict: "The combination of Quad ESL-989s and SVS SB13-Ultra rendered clean, dense, fast response for many different instruments, including kick and bass drum, synthesizer, and or timpani." LG concluded: "In its price range, it's the best subwoofer I've heard." The SB13-Ultra is sold direct from the Girard, Ohio, factory with a 45-day home-trial period and a money-back guarantee. (Vol.38 No.1 WWW)

Editor's Note: There are no Class C subwoofers listed.

D

PSB SUBSERIES 125: \$449

The SubSeries 125 (originally called SubSeries 1) is a front-ported, bass-reflex design with an 8" polypropylene-cone driver and a 110W, class-A/B BASH power amplifier. It has a claimed frequency range of 36–150Hz, measures 13.25" H by 9.625" W by 14.5" D, weighs 23 lbs, and has a black vinyl finish. There are front-panel Volume and Crossover controls and a rear-panel Phase switch. Setup was simple. With the SubSeries 1 in his system, SM noted a wider, deeper soundstage and tight, musical bass. As SM's review went to press, PSB announced a replacement for the SubSeries 1: The SubSeries 125 shares its predecessor's simple look and controls, but has a more powerful (125W) amplifier; the price remains the same. (Vol.36 No.4 WWW)

PSB SUBSERIES 100: \$249

Designed to complement PSB's Alpha PS1 powered desktop loudspeakers, the SubSeries 100 miniature subwoofer measures just 6 3/8" W by 6 3/8" H by 7 7/8" D, and has an attractive high-gloss black finish. The sealed-box sub includes a 50W class-D amplifier and a 5 1/4" drive-unit designed to maximize bass extension while minimizing distortion. Volume, Crossover, and Phase controls, along with a single pair of RCA inputs, are provided on the tidy rear panel. Setup was simple; the sub partnered seamlessly with SM's Alpha PS1s, showing no evidence whatsoever of discontinuities between the high and low frequencies. In addition to clean, well-extended bass, the SubSeries 100 provided improved senses of timing and touch, better image focus, deeper silences, and more dramatic climaxes, said SM. Can be purchased with PSB's Alpha PS1 loudspeakers, as the Alpha 1-100 system, for \$499.99—a savings of \$50. (Vol.37 No.3 WWW)

K

Tannoy TS2, JL Audio Fathom f113 Mk.2.

FM TUNERS & ANTENNAE

A

47 LABORATORY MODEL 4730 MIDNIGHT BLUE: \$1500 \$\$\$

From Japan's reliably unconventional 47 Laboratory comes the Model 4730 Midnight Blue stereo FM tuner,

surely the only tuner in current production that allows the user to dial in stations with an actual dial. Its modest size (4.8" W by 3.75" H by 8" D) and attractive dark-blue casework set it apart, as does its use of an old-style rotary variable capacitor—made in a small batch to designer Junji Kimura's order—instead of a crappy digital receiver circuit. According to AD, "Decent-quality broadcasts sounded better through the 47 Laboratory Midnight Blue than MP3-quality Internet radio does through any USB digital-to-analog converter of my experience. The 4730 was clear and believably crisp without undue brightness, and while it didn't have the sweetness of, say, a McIntosh MR-65, it performed admirably with weak signals, ultimately pulling usably clean sound from a greater number of stations than the Tivoli Model One I normally use. And the 4730 looks a lot better, and was more fun to use." (Vol.37 No.9 WWW)

C. CRANE FM REFLECT ANTENNA: \$34.95

The CCrane FM Reflect Antenna is a thick T-run of twin copper wires terminated by a 75 ohm connector. ST arranged it discreetly behind a closed window curtain, and used it to pull in all of his favorite HD Radio stations, including those his Sony XDR-F1HD tuner couldn't otherwise retrieve. "This is, by far, the best indoor FM antenna I have used, with or without HD Radio, and I am buying two more," he said. (Vol.32 No.4)

DAYSEQUERRA FM REFERENCE SIGNATURE MODIFICATION: \$3200 (+ COST OF TUNER) ★

David Day's Signature Mod effectively addresses this ultimate FM tuner's cathode-ray tube's tendency to burn out. Switching circuitry has been added to allow the CRT to turn off when not needed. The Signature Mod also replaces the tuner's incandescent bulbs with longer-lasting LEDs, and uses hand-matched, low-group-delay filters for lower distortion and better channel separation. LG noted punchy, quick bass response, a deeper soundstage, and a more transparent midrange. "The new CRT's greater range of brightness and longer life expectancy makes the Signature Modification essential for owners of the DaySequerra FM tuner." The FMR25 upgrade replaces older models' cathode-ray tube display circuitry with a much brighter and more reliable thin-film-transistor liquid-crystal display, and adds a post-FM demodulation filter to remove noise at 99kHz and above. "A run-don't-walk upgrade for owners of FM References," decided LG. Price is for upgrade only; does not include cost of tuner. (Vol.12 No.6, Vol.14 No.12, Vol.21 No.6, FM Reference; Vol.29 No.9, Signature Modification; Vol.36 No.11 25th Anniversary Edition WWW)

D

TIVOLI AUDIO MODEL ONE TABLE RADIO: \$149.99 ★

"The Tivoli Model One is a radio stripped to its essentials: no stereo, no station memories, no remote control, no tone controls," said ST. This design from the late Henry Kloss didn't like being played very loud, ST discovered, but was "plenty loud for a typical office, and, ultimately, loud enough for me." He heard "a richness, a warmth, a generosity of tone, and a clarity that made for enjoyable listening. I was never fatigued." "A bit boomy," says JA, "but pleasantly so." AD connected the Model One's record-out jack to his preamp inputs, then muted its speaker. Matching the Tivoli with a RadioShack 15-2163 FM antenna, he found that "the combination has been nothing short of wonderful in my system: a flexible, great-sounding monophonic source for a combined price of only \$124." (Vol.24 No.3, Vol.27 No.7 WWW)

NOTE TO READERS

Due to space limitations, the following sections had to be omitted from this print edition of "Recommended Components": Accessories, Headphones, Signal Processors, Cables of all kinds, Miscellaneous, Phono, and Powerline Accessories, Stands & Racks, Signal Processors, and Books & Software. These can all be found at www.stereophile.com/category/recommended-components.

P

laying the blues can get old fast. Since this most fundamental American popular music stopped being the African-American party music of choice, and became a *traditional* music, celebrated as the precursor of rock'n'roll, blues players face a stark choice: change, or be content with playing small clubs and bars.

Perhaps the best example is

Robert Cray, who, after a brief moment in the sun in 1986, when his album *Strong Persuader* was released, has been searching for new momentum and a new direction ever since. A more recent example, from Austin, TX, is Black Joe Lewis. Once signed to now-defunct Lost Highways Records, Lewis was the quintessential young blues star who was "going to break through." He's since fallen off the radar, as evidenced by his bitterly titled *Electric Slave*, released in 2013 by the indie label Vagrant.

Because the blues are so well known, and can quickly become a series of musical clichés—particularly when you're talking about guitar players—young, ambitious musicians like Gary Clark Jr., who want to make more than a modest living from music, have to figure out a way to somehow build on the blues to create their own music. This undoubtedly means a sound that will appeal more to a younger crowd, will sell out arenas and sheds, and raise a musician's profile to star-level pay and adoration.

That's exactly what Clark has attempted with *The Story of Sonny Boy Slim*, his first self-produced album for Warner Bros. He's grown from being a blues-kid teen phenom sitting in with adults in his hometown of Austin, through a period in his mid-20s when his psychedelic string-bending solos evoked cries of "the next Jimi Hendrix!," to this non-guitar-centric, non-blues-centric record in which he plays nearly all the instruments himself and tries to refine his ideas into a new music. Reached in New York City on the eve of a European tour, to be followed by a summer US tour opening for the Foo Fighters, Clark said that making *Sonny Boy* was a long slog.

"I'd be on the road, jump in for a couple weeks at a time, lay down the ideas that I had, and then sit back and listen while I was on a plane or bus. We cut about 28 ideas, then narrowed it down to 13. There is some stuff that didn't quite work out, but I'll go back to it.

"The process was, I was there in a room. I had some bare ideas—things that I collected, things I sang and played into my phone—and I'd just set up all the instruments, and the guys in my band just sat back and let me figure it out. It took a little while—I wrote a lot of new things while we were in the studio. I got to go into the room and just play and experiment; be free and open like a 12-year-old kid. They were very patient. They had some moments where they raised their eyebrows, like, 'What the hell is this guy

UP
FROM THE

doing?"—but it finally made sense to everybody."

Decidedly unbluesy, *The Story of Sonny Boy Slim* is Clark's soul record. Blessed with the kind of strong voice that will ultimately save his career, he took the late Curtis Mayfield as his model in the three tunes that are the heart of the album. The first track, "Hold On," opens with a sample meant to mimic a scratchy LP, and is probably the best-crafted tune on a record that also includes short song fragments ("BYOB") and tracks that bear the marks of having too much time spent on them ("Star"). Clark's Mayfield-like singing, and his guitar crying behind the chorus, are satisfying. His Mayfield-like falsetto returns in the next track, "Cold-Blooded," as does a horn chart from the trio, Hard Proof Horns.

Another new direction on *Sonny Boy Slim* is the album's most composed number, "Can't Sleep."

It has a bouncy, steady dance rhythm, bravura singing from Clark, and its at-a-party narrative borrows a bit of inspiration from Marvin Gaye's "What's Going On." However, as in most of Clark's love songs, hints of menace and insecurity creep in: "Now you're the reason I can't sleep at night / And I can't go home, I know it ain't right, / I gotta leave you alone." In this tune Clark's guitar is heard only in brief squeals behind his voice.

"Of course I like blues, I respect the art form—but you know, I'm a child of the '80s and '90s," said Clark, who has also mastered a subdued but hip fashion-forward look. "I grew up with all kinds of things: Prince, OutKast, Nirvana, Biggie, Tupac, the whole West Coast movement, Too \$hort, the Houston



WITH THE STORY OF SONNY
BOY SLIM, GARY CLARK JR.
SEEKS HIS OWN MUSIC
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rap scene, DJ Screw, Lil' Keke, and guys like that. I soaked it all up. So I'm influenced by all those things. And I'm influenced by my parents and what they listened to: funk and soul, Parliament, Funkadelic, Lamont Dozier, Diana Ross and the Supremes, Smokey Robinson and the Miracles, Stevie Wonder.

"I feel like I've always been my own producer. Before I made *Blak and Blu* [2012], there was just me and the engineer and the band, so I was always very hands-on about how I wanted things to sound and how I wanted to improve the instrumentation, the arrangements. With this record, I kinda feel like I'm bringing it back home, right in my comfort zone. It felt very natural and organic."

Because only an MP3 stream of *Sonny Boy Slim* was available as this issue went to press, a serious assessment of sound quality wasn't possible. Clark said that while most of the album was recorded straight to Pro Tools, he also "beefed it up, warmed it up, with some tape."

A protégé of the late Clifford Antone, the legendary Austin club owner, Clark has enjoyed a rapidly ascending career. After playing, in his teens, with every notable Austin musician, he went on to make successful festival appearances: at Crossroads (2010), Bonnaroo (2011), and, at the White House, the Red, White and Blues Festival (2012). He's since been a frequent guest of and/or opening act for the Rolling Stones, and constantly tours as an opening or headlining act. *The Story of Sonny Boy Slim* has also freed Clark from being his own band's guitar-hero frontman, blazing away on solos night

THE BLUES POLICE MAY NOT LIKE ME, BUT THAT'S OKAY. I'M STILL ME, AND I'M COMFORTABLE WITH THAT.

after night on the Epiphone guitar model named for him. For *Sonny Boy*, Clark concentrated on playing rhythm as well as lead.

"I love Nile Rodgers, Matt 'Guitar' Murphy . . . I remember all the guys down on Sixth Street would say, 'Yeah, any guitar player can play a solo, but when it's not solo time, you got to be part of the band and play the song.' It's not all about playing lead. I really wanted to play rhythm guitar and have colors, different tones and textures in all the music, so I was really excited about being able to play rhythm and work out parts and structure—lining up and playing in the pocket, playing in the groove to help enhance the song, and not distract. When that feeling's there, there's nothing like it. That's the kind of stuff that makes you close your eyes and bob your head. I'm all about that. Curtis Mayfield and Marvin Gaye? The rhythm guitar in all of that is really beautiful."

Possibly, *Sonny Boy Slim*'s best tune—or at least the most fun to listen to—is "Shake," a '60s-style garage-rock rave-up that recalls everyone from the Sonics to Lonnie Mack. When I mention it, Clark gives a little laugh. "This guy that I know makes, like, cigar-box guitars, and there was this one that was a Quaker oatmeal can. It had three strings, and I just kind of picked it up and was kind of playing around with it.

I came up with that riff, and I thought, 'We gotta cut this.' So I called up my buddy [drummer] Jay Moeller, who I've known for years. I kinda grew up with him, and he taught me everything I know, and I was, like, 'Man, you would be perfect on this. It's kind of a Hound Dog Taylor crazy thing.' We grabbed it in one take. We kind of made it up as we went."

Although Clark recently moved to Los Angeles with his wife, Australian supermodel Nicole Trunfio, and their child, one-year-old Zion Rain Clark, ("In making this record, I had a lot to draw from," he said of fatherhood), he says he'll always be connected to Austin and the long tradition of great Texan blues-guitar players. "I definitely do feel connected to that Austin tradition, because that crew and that family kind of raised me in this music world. While I was going off and doing other things, and listening to hip-hop and rock'n'roll, punk, or whatever, my main musical source in education came from that, and those guys really gave me a chance and let me figure it out on my own. Of all the Texas guys, though, Freddie King was the most intense and powerful. He was really bluesy, but he had that funk aggressiveness, that big, heavy groove, that I can really relate to."

Connected to the blues, Clark is determined to create a new music, one that's shot through with the past, yet filled with enough modern references to attract a younger, non-blues audience. *The Story of Sonny Boy Slim* is the first step in that journey.

"I also don't want to spend my life and my musical career trying to re-create B.B. King's *Live at the Regal*. As much as I love that record, it's been done. And while I have respect for it—Stevie Ray Vaughan's *Live at Carnegie Hall*, too—they did that, and laid the foundation to where you have to grow from there. The blues police may not like me, but that's okay. I'm still me, and I'm comfortable with that.

"This record is something personal to me about where I come from and where I am now, as a man and as a musician. I took a lot of time to sit back and reflect. In my family, my mom called me Sonny Boy, and the guys around the smoky blues bars in Austin, when I'd walk up they'd say, 'Hey, Slim.' So all those things kind of got me to where I am now. I just put them together into *Sonny Boy Slim*. That's the story." ■

HERB REICHERT

Line Magnetic Audio LM-518IA

INTEGRATED AMPLIFIER

When I began writing for *Stereophile*, I heard people whispering: “Herb is one of those triode-horn guys.” Wrong. Most of my life, I’ve favored solid-state integrated amplifiers driving small, British-made speakers.

“I’m sure he hates digital.”

Wrong again. I sold all my LPs some 12 years ago, and since then I’ve been filling my days with CDs and high-resolution downloads. (However, I *am* starting to collect vinyl again, because my vintage DNA still remembers how to worship at the Altar of Black Discs.)

“Reichert? He’s a mono guy. He’s not into imaging.”

Way beyond wrong! In my view, hearing the *tangible* verity of a recording venue, and the precise locations in it of microphones and performers, are essential to any full comprehension of recorded music.

Of course, I am not free of audiophile prejudices. I am not attracted to giant robots (very large loudspeakers) or alien monoliths (big, heavy power amplifiers). Both tend to make me anxious. I also believe that, if an audio component is going to cost as much as a good car, it should image well enough to reveal to me its own blue-robed design wizard floating above it. Actually: I want to *see* that wizard, and his wand *and* pointy hat, even when the component costs only as much as an affordable integrated amplifier.

The highest-quality audio products are not designed using only a single audio technology, old or new, any more than they are created only by a particular ethnic group or only within a particular geopolitical sphere. Today’s best hi-fi inventions are made everywhere on the globe, by brave, inspired, talented people whose creations aren’t me-too products, but instead are unique components designed to fulfill the earnest dreams of devoted *audio connoisseurs*. The Line Magnetic LM-518IA integrated amplifier is such a product.

Description

In 2005, two brothers established the Line Magnetic Audio Co. Ltd., to manufacture—in their own factory in Zhuhai, in China’s Guangdong Province—distinct ranges of CD players, DACs, amplifiers, and loudspeakers. They were motivated by the excellent sound and build qualities and elegant appearance of vintage Western Electric movie theater electronics and loudspeakers.

The elder brother, Zheng Cai, is in charge of Line Magnetic’s Classic models, which include high-quality reproductions of such vintage Western Electric gear as the renowned 91A and 86A 300B amplifiers, as well as other WE-inspired inventions of Cai’s own design. His younger brother, Zheng Xi, is in charge of a team that creates Line Magnetic’s Silver and Gold lines of more affordable audiophile products, including the LM-518IA (\$4450), a single-ended-triode, line-level integrated amplifier, based on the 845 triode tube. The LM-518IA has been at the heart of my reference system for more than a year.

If you’re not familiar with the Line Magnetic product range, I encourage you to take a moment and peruse the website of Tone Imports, Line Magnetic’s US distributor. There you’ll see that the LM-518IA is the middle model of a range of three 845-tube SET amps. The biggest, the LM-2191A—*almost* an alien monolith—costs \$7495. It uses a single 300B triode tube per channel as a driver stage for its single 845 output tube per channel. The LM-518IA’s diminutive sibling, the LM-218IA (\$3495), is a smaller, lighter version of the ‘518 in hammertone silver, with no rectifier tube. Like the ‘518, the ‘218 has two 12AX7 tubes and a pair of triode-operated beam power tubes—6P3Ps are standard in the ‘518—to swing the high voltages needed to drive the grids of the fierce 845 output tubes. All three amps feature retro styling, and massive mains and output transformers.

For those of you unfamiliar with directly heated tubes, the 845 is a three-element tube that, unlike the ubiquitous,

SPECIFICATIONS

Description Tubed integrated amplifier. Tube complement: two 845, two 6P3P, one 5AR4, two 12AX7. Line inputs: 3 (RCA). Input impedance: 100k ohms. Input sensitivity (integrated): 200mV. Output taps: 0, 4, 8, 16 ohms. Power output: 22Wpc into 8 ohms

(13.4dBW). Frequency response: 10Hz–50kHz, –1.5dB. Harmonic distortion: 1% at 1kHz (A-weighted). Signal/noise ratio: 87dB (A-weighted). Power consumption: 320W.

Dimensions 16.75" (430mm) W by 9.75" (250mm) H by

14.25" (365mm) D. Weight: 77 lbs (35kg).

Serial number of unit reviewed 13040078.

Price \$4450. Approximate number of dealers: not disclosed.

Manufacturer Line Magnetic Audio Co. Ltd., Fourth Floor,

Building No.2, Ping Xi Road No.6, Nanping Industry Park, Zhuhai, Guangdong Province, China.

Tel: (86) 0756-3911922.

Fax: (86) 0756-3911933.

Web: www.lm-audio.com.

US distributor: Tone Imports, Web: www.toneimports.com.



Compared to some lazy, bourgeois EL34 amp, the LM-518IA is a fire-breathing fairytale beast.



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indirectly heated 12AX7 or EL34 tubes, does not employ a separate heater for the cathode to generate currents of electrons. Instead, directly heated triodes conduct large amounts of current in order to boil off high-energy electrons directly from their coiled-wire filaments. A directly heated tube has one of two filament types: dull emitters, which are nickel coated in oxide; or bright emitters of thoriated tungsten, as in the 845. Almost every guitar amp and audiophile tube amp made today uses indirectly heated coated-nickel dull emitters.¹ To my ears, a properly designed amplifier using directly heated thoriated-tungsten tubes always sounds more vivid, elegant, direct, and brilliant than its indirectly heated dull-emitter counterpart—especially when excessive amounts of feedback aren't masking the tube's essential character.

The most important thing to understand about the design of the LM-518IA is that it is *not* a KT120, EL34, EL84, KT88, or 6550 amp. Unlike those popular audio-tube types, the 845 was designed—by RCA, in the early 1930s—to be a sturdy source of power in commercial and military radio transmitters like the ones in your local AM station or B-17 bomber. Each 845 anode requires over 1000V DC and is capable of dissipating about 100W. Compared to some lazy, bourgeois EL34 amp, the LM-518IA is a fire-breathing fairytale beast: the sonic and aesthetic antidote to all those newfangled, cool-running, class-D solid-state amps. Run in pure class-A, the 845 tubes' filaments operate at 3140°F, and their glass surfaces emit literally *skin-searing* heat. Beware! *Never* touch the big tubes while they're lit, or for quite a while after they've been turned off—and *never* poke around

inside an LM-518IA just after you've turned it off. The former will send you to the emergency room. The latter could send you to your grave—or, worse still, maybe even void your warranty!

The first time I lifted the 77-lb LM-518IA out of its box, I realized that it's a helluva lot of stereo amp for \$4450. And when I removed its bottom plate, I couldn't stop staring at the expensive, German-made Neglex coupling capacitors, or counting the multitude of Japanese-made Rubycon electrolytic capacitors. Eventually, I noticed the LM's two substantial filter chokes, and the artfulness of its point-to-point wiring.

On the rear panel, for each of the two channels are four high-quality, gold-plated, five-way speaker terminals: one each for 0 (ground), 4, 8, and 16 ohms. The only preamp inputs are three pairs of gold-plated RCA jacks. A fourth pair of RCAs, labeled Pre In, lets the LM-518IA be used as a basic power amp.

On the LM-518IA's enameled top plate are screws for adjusting the bias and canceling any hum in each 845 tube. In the course of my yearlong possession of this amp, I have never had to use these: There has been no hum, no sputtering, no hissy crackling noise—just lots of warm air rising. Speaking of which, it's essential that you leave at least a foot of open space around and above the LM-518IA. And if you value the safety of curious pets or wayward children, use the tube cage (supplied).

1 All those dull tubes might actually be responsible for an expression—one that I've always hated—for something I've rarely experienced: *tube sound*. (For further reading on this, see: www.stereophile.com/content/whats-right.)

MEASUREMENTS

I measured the Line Magnetic LM-518IA using my Audio Precision SYS2722 system (see www.ap.com, and the January 2008 “As We See It” at www.stereophile.com/content/measurements-maps-precision). Before starting the testing, I followed the instructions in the manual and left the amplifier turned on for 15 minutes; then, without any signal, I adjusted the bias of each 845 output tube to the correct value. (Very little

adjustment was necessary.) Next, I short-circuited the inputs and, with the volume control at its maximum, adjusted the hum-balancer potentiometers to give the lowest measured noise for each channel. I performed a full set of measurements from each output-transformer tap.

The LM-518IA preserved absolute polarity from each output tap (ie, it was non-inverting), and its input impedance was very high, ranging from 59k ohms at 2kHz to 75k ohms at 20Hz. The maximum voltage gain, measured into 8 ohms, varied with the output tap, but was appropriate for an integrated

amplifier: 40.2dB (16 ohm tap), 38.6dB (8 ohm tap), and 36.5dB (4 ohm tap). The output impedance varied slightly with frequency and load impedance, but was approximately one-quarter the nominal value of each output-transformer tap: 3.8 ohms (16 ohm tap), 2 ohms (8 ohm tap), and 1.1 ohms (4 ohm tap).

These impedances are relatively low for a single-ended-triode amplifier. As a result, the modification of the LM-518IA's frequency response due to the Ohm's law interaction between this impedance and that of our standard simulated loudspeaker remained

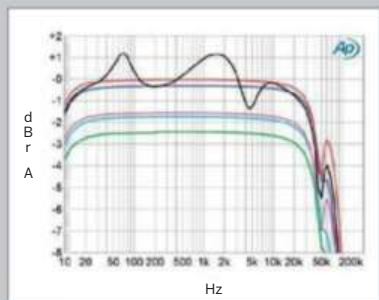


Fig.1 Line Magnetic LM-518IA (8 ohm tap), volume control set to maximum, frequency response at 2.83V into: simulated loudspeaker load (gray), 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta), 2 ohms (green) (2dB/vertical div.).

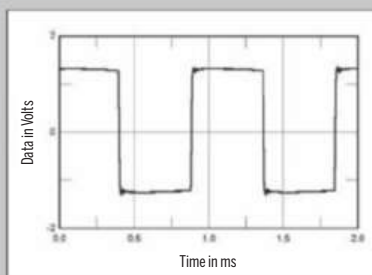


Fig.2 Line Magnetic LM-518IA (4 ohm tap), small-signal, 1kHz squarewave into 8 ohms.

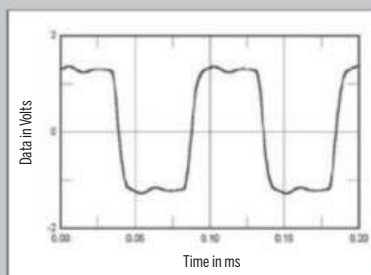


Fig.3 Line Magnetic LM-518IA (4 ohm tap), small-signal, 10kHz squarewave into 8 ohms.

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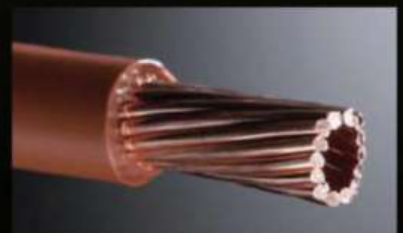


Patent US 8,658,892

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Pure Copper Buss System



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On the front panel are a sturdy On/Off button, a meter to assist in biasing the 845 tubes, and two silver dials. The first of those is the volume control, its face containing a tiny orange LED that subtly flashes as the LM-518IA warms up, after which it glows steadily, serving to indicate the dial's position. The second dial selects among the three line-level inputs. The stainless-steel remote control sports only Volume and Mute buttons. The LM-518IA has no DAC, no phono stage, no Bluetooth receiver, no WiFi capabilities—and, to my extreme disappointment, no balance control or mono button.

Listening

It was never my intention to formally appraise the Line Magnetic LM-518IA. I borrowed it only to use it as a temporary reviewing tool: I needed a high-quality, reasonably priced integrated amplifier that was more contemporary and more available than my vintage Creek Audio 4330, and that could serve as a benchmark against which to assess other affordable (and mostly solid-state) integrations. In this capacity, the LM-518IA has performed far be-



Now, under full review-level scrutiny, I at last recognized the LM-518IA's complete array of virtues.

measurements, continued

within limits of $\pm 0.8\text{dB}$ (4 ohm tap), $\pm 1.2\text{dB}$ (8 ohm tap; fig.1, gray trace), and $\pm 2.1\text{dB}$ (16 ohm tap). The traces in fig.1 were taken with the volume control set to its maximum—note the excellent channel matching, which was preserved at lower settings of the control. The frequency response into resistive loads is flat from 20Hz to 10kHz, with only a mild rolloff below 20Hz. The LM-518IA has an excellent output transformer. And though the secondary of this air-gapped trans-

former has a well-defined resonance at 60kHz, the associated response peak is low in level, particularly in the left channel, and that level doesn't rise with increases of load impedance. Though a degree of overshoot can be seen in the LM-518IA's reproduction of a 1kHz squarewave (fig.2), the 10kHz squarewave (fig.3) reveals just one cycle of damped ringing. Note also the flat tops and bottoms of the waveform in fig.2, which correlate with the well-extended low frequencies seen in fig.1.

Even after the hum-balancer adjust-

ment, the Line Magnetic's noise floor was higher than is typical for a tubed design. Measured with the inputs shorted but the volume control set to its maximum—the worst-case condition—the unweighted, wideband signal/noise ratios, ref. 2.83V into 8 ohms, were: 57.4dB (16 ohm tap), 59.7dB (8 ohm tap), and 61.5dB (4 ohm tap). Switching an A-weighting filter into circuit improved these ratios to, respectively, 65.6, 67.4, and 68.8dB, which will be barely adequate with high-sensitivity loudspeakers. Fig.4 indicates that while

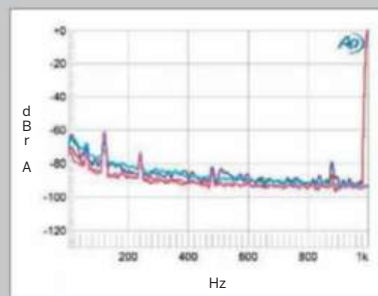


Fig.4 Line Magnetic LM-518IA (8 ohm tap), spectrum of 1kHz sine wave, DC-1kHz, at 1W into 8 ohms with volume control at: maximum (left channel blue, right red), minimum (left cyan, right red; linear frequency scale).

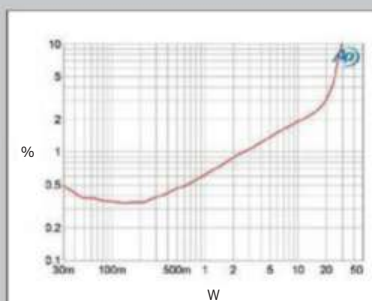


Fig.5 Line Magnetic LM-518IA (4 ohm tap), distortion (%) vs 1kHz continuous output power into 4 ohms.

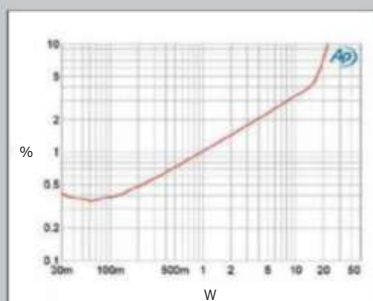


Fig.6 Line Magnetic LM-518IA (4 ohm tap), distortion (%) vs 1kHz continuous output power into 8 ohms.

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yond the original call to duty. I review it now only because I believe readers need to know: What *is* this brightly glowing, 22Wpc amplifier to which I keep alluding?

But until I began the more serious critical listening required for this review, I never realized how classically well balanced the LM-518IA's sound actually is. I knew it sounded elegant, colorful, and exciting, but I hadn't known how capable it was of opening doors on hitherto hidden inner spaces of my music.

With the Falcon Acoustics LS3/5a

The Line Magnetic LM-518IA mated especially well with the Falcon LS3/5a that I reviewed in August. The amp's 16-ohm taps loved the 15-ohm Falcons, and the Falcons really let those 845 tubes strut their stuff: The bright emitters wrung every last drop of midrange color and bass texture from these classic minimonitors. The Falcons are masters at showing me what an amplifier—or recording—really sounds like, and the LM-518IA didn't escape their scrutiny. The LM-Falcon combo not only played records with astonishing color and limitless inner detail, it let me peek inside the tubes and access the vital energy of the 845s: a free-flowing energy that resuscitates lines of notes and can take recordings of baroque and renaissance music—madrigals, harpsichord music, choral music—to goose-bump levels. And solo acoustic pianos had rock-solid spatial presence. I experienced an almost primal connectedness to the whole SET experience—something I hadn't felt in more than 12 years. The

one noticeable downside of this revealing amp-speaker combo was that the LM-518IA clearly emphasized the Falcons' rising top end.

With the KEF LS50

With my reference KEF LS50 speakers, the LM-518IA let Hope Sandoval & the Warm Inventions, on their *Through the Devil Softly* (CD, Nettwerk 0 6700 30848 2), sing and play their way into my lustful artistic dreams. Having set the volume to late-night levels, I listened to the reverie-inducing "For the Rest of Your Life" and was reminded what a sucker I am for this former Mazzy Star artist and her own warm inventions: art meets ennui. Usually, the sound of the KEF LS50s has a damped, almost metallic thickness or membrane-like quality, a hesitance or squeezed-hose restriction of musical flow, that very slightly constricts the dynamic range. It's almost imperceptible, but mediocre amps can't penetrate or eradicate it. The LM-518IA's aforementioned vital energy seemed to unhesitatingly penetrate this constraint: This amp-speaker partnership was a free-flowing, satisfying, highly recommendable combination.

With the GoldenEar Technology Triton Five

The Triton Five speakers (review in the works) were voiced by GoldenEar Technology's founder, Sandy Gross, who used as his reference Line Magnetic's much bigger (but technically and sonically very similar) LM-219IA integrated. Therefore, I figured the LM-518IA might drive the Triton

measurements, continued

there are some power-supply-related spurs, the highest in level being at 120Hz, this noise is predominantly random. The blue and red traces in fig.4 were taken with the LM-518IA driving 1W into 8 ohms with its volume control at the maximum setting; repeating the spectral analysis with the volume control at its minimum setting (fig.4, cyan and magenta traces) didn't lower the noise floor. This suggests that the noise occurs after the volume control, which means that, unlike other amplifiers, reducing the volume won't improve the S/N ratio. The channel separation at 2kHz was 80dB, L-R, but 60dB, R-L,

these decreasing at 20kHz to, respectively, 58 and 40dB.

Figs. 5 and 6, both taken from the 4 ohm tap, respectively show how the THD+noise percentage changes with output power into 4 and 8 ohms. The LM-518IA is specified as offering a maximum power of 22Wpc (13.4dBW into 8 ohms, 10.4dBW into 4 ohms), and these graphs indicate that this power is achieved at just over 3% THD+N when the load impedance is the same as the nominal output-transformer tap. These graphs also indicate that, as usual with a SET design with minimal or no loop negative feedback,

the THD+N increases linearly with output power above a couple of hundred milliwatts. Unusually, the LM-518IA is less linear when the load is higher than the nominal tap value (fig.6), and more linear when the load is lower than the nominal value (fig.7). The rather ragged appearance of the trace below 1W in fig.7 is due to the presence of very low-frequency "flicker noise."

This can also be seen in fig.8, which plots the THD+N percentage from the 8 ohm tap at 2.83V into 8 and 4 ohms. The distortion was lower into 4 ohms (cyan and magenta traces) than into 8 ohms (blue, red). But, as expected from the LM-518IA's SET topology, the

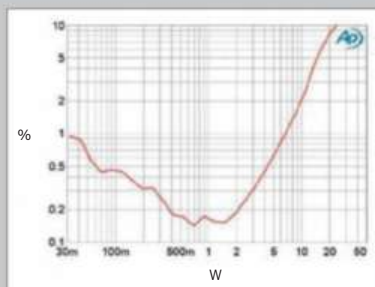


Fig.7 Line Magnetic LM-518IA (16 ohm tap), distortion (%) vs 1kHz continuous output power into 8 ohms.

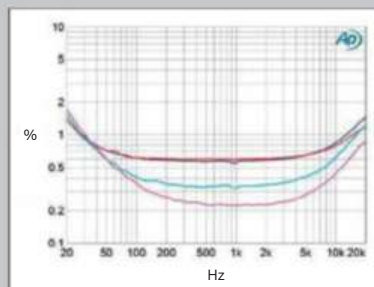


Fig.8 Line Magnetic LM-518IA (8 ohm tap), THD+N (%) vs frequency at 2.83V into: 8 ohms (left channel blue, right red), 4 ohms (left cyan, right magenta).

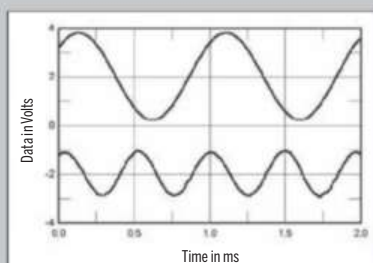


Fig.9 Line Magnetic LM-518IA, 1kHz waveform at 1W into 8 ohms, 0.58% THD+N (top); distortion and noise waveform with fundamental notched out (bottom, not to scale).

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I was right! While playing Kate & Anna McGarrigle's *Dancer with Bruised Knees* (1977 LP, Warner Bros. BS 3014), the LM-518IA sprinted down the music's halls, excitedly opening one hidden door after another. It did especially well with the swaying, syncopated "Be My Baby," featuring Anna on vocals and piano and John Cale on marimba. Everything felt natural and human-scaled. The song's structure, as well as that McGarrigle primal feminine charm, jumped right out at me. And the LM-518IA showed me an appealing organic softness. The complex tones of the Hammond B4 organ, highly textured and fully revealed, filled my room. I experienced heaps of new admiration for the McGarrigles and their songwriting, and for producer Joe Boyd.

Incidentally, the Triton Five uses the company's own fundamentally smooth and transparent air-motion transformer tweeter—referred to by GoldenEar as a high-velocity folded ribbon—which seemed to mate especially well with the LM-518IA's natural incandescence. Stay tuned for more about this interesting amp-speaker combo, when I finish reviewing the Tritons.

With the DeVore Fidelity Orangutan O/93

This is where it all began. Before there was Herb at *Stereophile*, there was Herb listening like a keen-eared dog to the DeVore apes singing by the light of the bright emitters. This combination did virtually everything I need a system to do: tuneful, clean, big-magnet, organic, paper-cone bass; rich, present, colorful, real-human-being-sounding voices; and

ASSOCIATED EQUIPMENT

Analog Sources Technics SL-1200MK2, Thorens TD 124 turntables; Abis SA1.2 tonearm; Ortofon 2M Black & CG 25 DI II, Shure SC35C, Soundsmith Carmen, Zu Audio DL-103 cartridges.

Digital Sources Puresound A8000 CD player, Line Magnetic LM-502CA DAC.

Preamplification April Sound GB-1, Blue Horizon Ideas Profono, Schiit Audio Mani phono stages; Simaudio Moon 350P preamplifier.

Power Amplifiers Hegel Music Systems H160, Simaudio Moon 330A.

Loudspeakers DeVore Fidelity Orangutan O/93, Falcon Acoustics LS3/5a, GoldenEar Technology Triton Five.

Cables Interconnect: AudioQuest Cinnamon & Big Sur & Golden Gate, Auditorium 23, Kimber Kable Silver Streak. Speaker: AudioQuest Type 4, Auditorium 23.

Accessories Sound Anchor stands, Dr. Feickert Analogue cartridge-alignment protractor.—Herb Reichert

instruments with consistently right-on timbres. The DeVore O/93s are chameleon-like speakers that have helped me discover that class-D, class-A, solid-state, push-pull, pentode, single-ended triode—all can be perfect paths to musical pleasure. The pairing of Orangutans and LM-518IA blazed one of those perfect paths.

measurements, continued

distortion is heavily second-harmonic (fig.9)—even at low frequencies (fig.10), when I would have expected some third harmonic to appear due to the onset of core saturation. Some third harmonic does appear when the load impedance is lower than the tap value, though it's still lower in level than the second harmonic (not shown).

The LM-518IA's decreasing linearity at high frequencies (fig.8) will not be a problem when the load is the same as or less than the nominal value of the transformer tap. The second-order difference products at 1kHz (fig.11) lie

at -60dB left and -70dB right (0.1% and 0.03%, respectively). But at higher powers, with a load impedance higher than the tap value, that product reaches 1% (fig.12).

I must admit, I was biased against the Line Magnetic amplifier before I began measuring it—its model number is similar to one of my least-favorite audio op-amp chips from my DIY days, National Semiconductors' LM318! But as I got deeper into the testing, the more impressed I became. Yes, as it's a single-ended-triode design, its bent transfer function leads

to a nonlinear signature dominated by second-harmonic distortion. And it's noisier than I like to see. But for such a design, it offers high power. The only unusual aspect of its behavior is that, whereas I usually recommend that a tube amplifier be used with the lowest-value output-transformer tap that gives adequate loudness, the opposite is the case with the LM-518IA. Using its 16 ohm tap with 8 ohm speakers will give the lowest distortion, though the subjectively benign second harmonic will then be joined by some third harmonic.—John Atkinson



Fig.10 Line Magnetic LM-518IA (8 ohm tap), spectrum of 50Hz sine wave, DC-1kHz, at 1W into 8 ohms (left channel blue, right red; linear frequency scale).

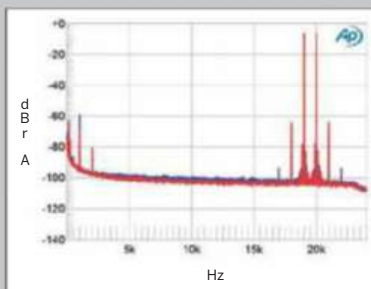


Fig.11 Line Magnetic LM-518IA (8 ohm tap), HF intermodulation spectrum, DC-24kHz, 19+20kHz at 1W peak into 8 ohms (left channel blue, right red; linear frequency scale).

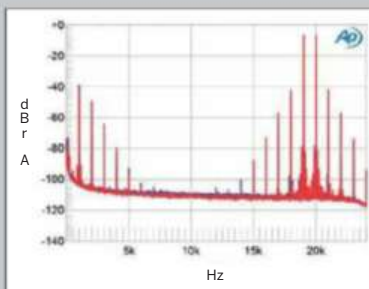


Fig.12 Line Magnetic LM-518IA (4 ohm tap), HF intermodulation spectrum, DC-24kHz, 19+20kHz at 5W peak into 8 ohms (left channel blue, right red; linear frequency scale).

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Conclusions

Most high-end audio components can be easily divided into categories of Good, Better, and Best. But there is a difficult group of audio things that fall into a different category, somewhere *between* Better and Best: the Really Good. And sometimes, a Really Good component can be better than the Best—when it matches up with *your* tastes.

The Line Magnetic LM-518IA is that sort of product. I'd been using it almost mindlessly as my reference integrated simply because it was here and it always sounded better than whatever I was reviewing. But now, under full review-level scrutiny, I at last recognized the LM-518IA's complete array of virtues. It is musically alive and vigorous. It moves forward like a caffeinated child chasing a scared cat. It is strong. It has easily driven every speaker I have tried with it. It plays music with rare charm and sensitivity. Its beguiling



light illuminates one of the most detailed soundstages I have ever heard as a reviewer. It is reliable: I have used and abused this 77-lb machine for more than a year and, more than any other amp I have reviewed, it seems

indestructible. Most important, the LM-518IA plays like an amp costing many times \$4450.

And, one dreamy, candlelit night. . . I *did* see a wizard with a wand and pointy hat! ■

SIDEBAR TUBE ROLLING

THE MOST IMPORTANT THING you can do with a thermionic valve is to hold it in your hand and study it with your eyes. More than you might think, what you see is what you get. High-energy electrons are boiled off the heater or cathode, pass through the wire control grid, and collide forcefully with that big black, gray, or silver thing—the anode, or “plate”—that occupies most of the space inside the bottle. What that anode structure looks like is probably what your midrange will sound like—*ie*, if the anode looks smooth and big and richly textured, those same qualities are likely to apply to the sound of the midrange. Study the texture, shape, and color of any tube's anode, then use it play to some Frank Sinatra or Ella Fitzgerald: You might be surprised to discover the usefulness of this maxim!

For more than a year, I used the Line Magnetic LM-518IA with its stock, Chinese-made Shuguang tubes: They sounded first rate, never misbehaving or making me wish for better. Everything I've written in this review is based on my experience with the standard Shuguang tubes.

Then I told Jonathan Halpern of Tone Imports, which distributes LM products in the US, that I was writing this review. He urged me to at least try the LM-518IA with some new old stock (NOS) tubes. “You will be

surprised,” he swore. I asked him and several of my friends to loan me some 12AX7s and 6L6s; I already had a few cool 5AR4/GZ34 rectifiers. I was hoping to cop some RCA, G.E., Elrog, or Psvane 845s, but no luck so far—yet I did score some vintage smooth-plate Telefunken 12AX7s, and some vintage East German Siemens box-plate ECC8035/ECC83s.

The LM-518IA uses as input-voltage amplifiers a pair of 12AX7s, and changing from the stock Chinese versions of those tubes

(which have a somewhat dull and flavorless character) to these vintage exotics made a significant, enjoyable, but not earth-shaking difference. The box-plate Siemens tubes jacked up the richness and color quotients, while the legendary smooth-plates made it sound as if someone had sent a team of maids to clean my apartment, fold my clothes, and set a vase full of fragrant flowers on every horizontal surface.

Switching from a Chinese 5AR4 rectifier tube to a Dutch Amperex Bugle Boy 5AR4/GZ34 made a change that was a bit subtler but perhaps even more rewarding. The Bugle Boy removed a previously unnoticed “electricalness” from the overall sound and replaced it with an unmistakable organic naturalness. (Note: Tube amps can be divided into two distinct types: those with tube rectification and those with solid-state diodes. The sounds of amps with tube

rectifiers tend to be more natural and less mechanical, and to flow better, than those with solid-state rectifiers.)

Then I went crazy. I replaced the 6P3P driver tubes, first with a pair of metal-envelope G.E. 6L6s (a nice slightly richer-sounding upgrade at very low cost) and, finally, with some expensive NOS Western Electric 350B beam power tubes. The WEs gave me the impression that the LM-518IA was capable of reaching even deeper into the music, yet there was also a reduction in that “May-June” bright-emitter lighting that I found so engaging. The WEs further enhanced musical textures and made the LM-518IA sound like a more luxurious and expensive audio product—but I still preferred the simpler, more lively neutrality of the G.E. and Shuguang tubes. My experiments in tube rolling were rewarding and fun. They also proved that Shuguang makes good tubes. —Herb Reichert

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MICHAEL FREMER

Krell Solo 575

MONOBLOCK POWER AMPLIFIER



Class-A amplifiers have a well-deserved reputation for being power guzzlers that run hot enough to burn fingers. They're inherently inefficient because their output devices conduct full current at all times, and much of that current is dissipated as heat—requiring, in the case of class-A solid-state amplifiers, massive heatsinks. This is why class-A amps tend to produce relatively low power, and tend to be heavy and expensive to buy and run. And these days, energy inefficiency is out of fashion.

These disadvantages are the results of class-A's advantages: When output devices are biased for class-A operation, the crossover distortion normally generated as the signal swings from positive to negative and back is eliminated. And that, say class-A fans, is the source of the breed's magical sound,

which is often described as smooth, rich, and coherent from top to bottom.

iBias

While class-A amplifiers figure prominently in Krell Industries' genome, the company has steered clear of them for a while—presumably for the disadvantages described above, and because those disadvantages make traditional class-A amplifiers impractical for home-theater-friendly, high-powered, multichannel systems. And I would guess that Krell isn't willing or able to invest in a separate line of mono or stereo class-A amps designed only for audiophiles.

A class-A amp that would be sensible for use in a multichannel system would have to produce a prodigious amount of power, be of practical size, consume little power

SPECIFICATIONS

Description Solid-state class-A monoblock power amplifier. Inputs: 1 unbalanced (RCA), 1 balanced (XLR), 1 CAST. Outputs: 1 pair binding posts. Output power: 575W into 8 ohms (27.6dBW), 900W into 4 ohms (26.5dBW). Frequency response: 20Hz–20kHz, +0/–0.15dB; <0.5Hz–100kHz, +0/–3dB. Gain: 27dB. Output

voltage: 192V peak-peak. Output current: 22A peak. Slew rate: 40V/μs. THD at 575W into 8 ohms: <0.03% at 1kHz, <0.19% at 20kHz. Input impedances: 100k ohms (single-ended), 200k ohms (balanced). Input sensitivity: 3.03V RMS (single-ended or balanced). Signal/noise: >108dB, wideband, unweight-

ed, ref. full power output; >115dB, A-weighted. Power consumption: 1W standby, 131W idle, 2660W max.

Dimensions 16.9" (434mm) W by 7.6" (194mm) H by 20.9" (536mm) D. Weight: 70 lbs (31.8kg) net, 80.1 lbs (36.4kg) shipping.

Serial numbers of units reviewed 30315060124/125.

Price \$22,500/pair. Approximate number of dealers: 85. Warranty: 5 years from date of purchase, 6 years from date of manufacture.

Manufacturer Krell Industries, LLC, 45 Connair Road, Orange, CT 06477-3650. Tel: (203) 799-9954. Fax: (203) 799-9796. Web: www.krellonline.com.

at idle, and run relatively cool, eliminating the need for massive heatsinks; Krell's recently developed iBias technology (patent pending) appears to fulfill those requirements. iBias is conceptually similar to the sliding-bias or tracking-bias amps of the past—Nelson Pass's Threshold 800A of the 1970s might have been the first—in which input signal was monitored, and that information was used to adjust the bias voltage, all based on an assumed speaker load. Krell's iBias circuit is said to monitor the amplifier's *output* current, which the company claims is a far more precise and efficient arrangement because it measures the real-time demands of the specific speaker to which the amp is connected.

Krell uses iBias in a broad range of models: monoblocks, as well as amplifiers of two, three, five, and seven channels. The subject of this review, the Solo 575 (\$22,500/pair), is their most powerful iBias monoblock. In fact, the Solo 575 is unusually powerful for a class-A amp, outputting a claimed 575W RMS into 8 ohms or 900W into 4 ohms, yet weighing only 70 lbs and having no external heatsinks. Instead, heat is dealt with by four small, thermostatically controlled fans on the rear panel that exhaust through the top panel.

If you're skeptical about Krell's claim that a class-A amplifier of that size and weight can output that kind of power without heatsinks, you're not alone: If its bias voltage varies with demand, can it even be called a class-A amp? And does it sound like one? Maybe John Atkinson's measurements will offer an answer to the first question. I'm better qualified to answer the second.

Description

Aesthetically, the new Krell *looks* more like a conventional class-A/B amplifier. Rather than being housed in a milled-aluminum case with a thick top plate, the Solo 575 is wrapped in a thin, U-shaped cover—the kind usually found on better home-theater receivers and processors: That's a money-saver, as is the absence of heavy heatsinks along the sides. But the amp does have a thick aluminum faceplate, of the same (attractive) curved design used throughout Krell's line—including the superb-sounding Foundation surround-sound processor I reviewed in March 2014 for *Sound&Vision*.¹ Like the Foundation, the Solo 575 has a somewhat dated-looking LCD screen, which displays the unit's IP address—more about that later—and alerts you to fault conditions. For those of you too young to remember, in the old days, amplifiers communicated problems like

shorted speaker terminals with smoke signals and, sometimes, flames.

On the Solo 575's rear panel are single-ended RCA and balanced XLR inputs, excellent and easy-to-use WBT Next-Gen speaker binding posts, a power switch, a 12V Trigger input, an RJ45 Ethernet connector, and the aforementioned cooling fans, as well as Krell's proprietary CAST (Current Audio Signal Transmission) Lemo connector input, for use with Krell front-end components.

From input to output, the Solo 575's circuitry is fully complementary and fully balanced, and uses all discrete components. At the input stage, the incoming signal is converted to current by proprietary multiple-output current mirrors; from there on, all gain is applied as current gain. Throughput is direct-coupled—there are no capacitors in the signal path—for lower internal impedance and, according to Krell, more precise control of the speaker, as well as flatter and more extended low-frequency response. DC servos are used to remove DC from the output.

When I asked Bill McKiegan, president of Krell Industries, about the Solo 575's price—which, despite the money-saving construction, is still \$22,500—he quickly cited the considerably higher prices of earlier Krell monoblocks; I would add that competing amplifiers that output far fewer watts but are housed in more substantial cases can cost upward of \$50,000/pair—I've reviewed quite a few of those in the last few years. Given its power output, the Solo 575 might be a relative bargain.

Easy Setup

After connecting to it to a network router—that's where the RJ45 jack comes in—and entering the amplifier's pre-assigned IP address from a Web browser on a computer or tablet, the Solo 575 user can access that amp's individual Web page (see p.155). From there, the user can monitor the Solo 575's thermal status, as well as put it in mute and download software updates. The page can alert you to fault conditions, such as crossed speaker wires. Any detected fault automatically triggers an e-mail to Krell, who then enter the unit's serial number in their database and notify the dealer who sold it to you (as well as the many audiophiles at the National Security Agency).

I spent time driving the Solo 575s' balanced XLR inputs

¹ See www.soundandvision.com/content/krell-foundation-surround-processor.



The Krell amps had a bottom-end whomp that reminded me of Bel Canto Design's Black amplification system.

Fan Club: four fans suck in cooling air. Note the ethernet port



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via the transformer-coupled XLR outputs of my darTZeel NHB-18NS preamplifier, but I did most of my listening with the darTZeel's single-ended outputs driving the Krell's single-ended inputs.

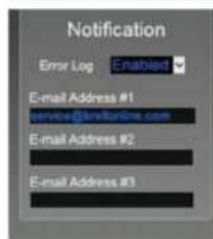
Take 1

I'm not biased for or against class-A amplifiers—or, for that matter, for or against class-A/B amps, though the latter are what I've mostly owned over the years. The solid-state class-A amplifiers of my experience have always sounded velvet-smooth, non-electronic, and often tube-like, though some have sounded softer than I like. It's easy to understand the enthusiasm for class-A among many audiophiles, especially in terms of sonic purity and an absence of electronica.

But when I first played music through the Krell Solo 575s, they sounded broken: glazed and spatially flat, with weak bass. I was going to call McKiegan, but decided to let the burn-in process take its course. Two days later, they still sounded broken. I decided to do a reset: I turned off the Krells, pulled their plugs, then plugged them back in and powered them up.

Take 2

I put on a recent vinyl edition of Eiji Oue conducting the Minnesota Orchestra in Copland's *Symphony 3* and *Fanfare for the Common Man* (200gm LP, Reference RM-1511)—a recording with enormously dynamic, well-extended, texturally supple, room-rattling bass-drum *thwacks*. I immediately heard a muscular, well-textured bottom end as the Solo 575s exerted a superior grip on the woofers of my Wilson Audio Specialties Alexandria XLF speakers, compared to that of



When connected to a network, the Solo 575's Web page shows the amplifier's status.

my reference DarTZeel NHB-458 monoblocks. The weight and power of the Krell amps were undeniable: They had a bottom-end *whomp* that reminded me of Bel Canto Design's \$50,000 Black amplification system—and that's a compliment.²

The Krells weren't broken. What had happened? I don't know.

I had used the Copland LP to evaluate the Swedish Analog

2 See my review of Bel Canto's Black system in the July 2015 issue: www.stereophile.com/content/bel-canto-design-black-amplification-system.

MEASUREMENTS

I performed a full set of measurements on the Krell Solo 575 (serial no. 30315060125) using my Audio Precision SYS2722 system (see www.ap.com and the January 2008 "As We See It," www.stereophile.com/content/measurements-maps-precision). Before measuring it, I preconditioned the amplifier by running it at one-third the specified power, 190W, into 8 ohms for 30 minutes. (I usually run an amplifier for an hour, but my test load was getting uncomfortably

hot after half that time.) The amplifier's cooling fans turned on immediately at this power level and were noisier than I was anticipating. At the end of 30 minutes, the top panel was warm; only the slotted area where the fans vent was hot, at 137.4°F (58.6°C). The percentage of THD+noise at this power level was 0.009% with the amplifier cold, 0.0088% with it fully warmed up.

The Solo 575's voltage gain at 1kHz into 8 ohms was 26.5dB with both balanced and unbalanced input signals.

(I couldn't measure its performance via the CAST input; with unbalanced drive, I inserted the supplied shorting plug between pins 1 and 3 of the input XLR jack.) Unusually, the Krell inverted absolute polarity for both its balanced and unbalanced inputs. Although the specified input impedance was very high, at 100k ohms unbalanced and 200k ohms balanced, the measured impedance was very much lower, at close to 4.9k ohms for both inputs across the audioband. This is not an amplifier that should be used with

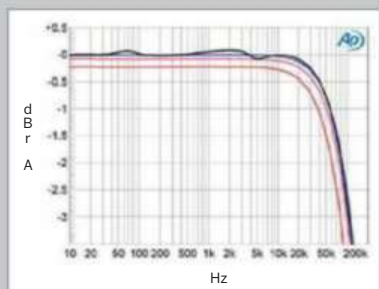


Fig.1 Krell Solo 575, balanced frequency response at 2.83V into: simulated loudspeaker load (gray), 8 ohms (blue), 4 ohms (magenta), 2 ohms (red) (1dB/vertical div.).

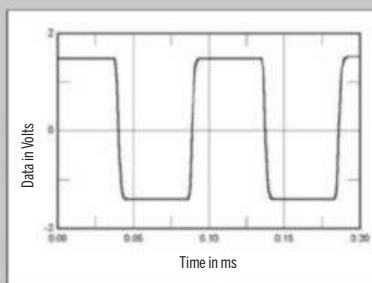


Fig.2 Krell Solo 575, small-signal 10kHz squarewave into 8 ohms.

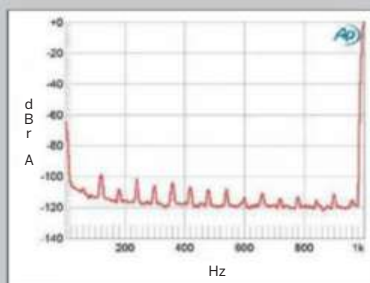


Fig.3 Krell Solo 575, spectrum of 1kHz sinewave, DC-1kHz, at 1W into 8 ohms (linear frequency scale).

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Technologies tonearm³ through my darTZeel amps, and while that bass was impressive in every way, the Solo 575s' transient slam and grip on the Wilsons' woofers took it to another level of excitement. Put it this way: The SAT arm's contribution to the sound of my system was like adding a subwoofer; with the 575s in the system, it was like adding a second sub—or even a third—so powerfully deep, throbbing, yet well controlled was the bottom end. There wasn't *more* bass; instead, what bass there *was* was just better controlled and better damped.

Also immediately obvious was less air on top than with the darTZeels, and a narrower soundstage that concentrated more of the orchestra between the speakers instead of spreading it out past their outer side panels. I'm not sure how this is possible with monoblocks; perhaps it had something to do with the Krells' somewhat less generous top-end extension.

The overall sound was definitely drier than the darTZeels, but this was still at the very beginning of my listening. I decided to stop analyzing and instead just listen for pleasure—the way I used to before this became a *job*—to find out if my auditory pleasure zones would, over time, connect with the sound of my system as driven by the Krells: something that did not happen with the Bricasti Design M28 monoblocks (\$30,000/pair).⁴

I pulled out some of the many thousands of LPs I have that have never been played. One was a still-sealed copy of *Music of Lodovico Giustini, Volume I, Performed on the 1720 Cristofori Pianoforte at the Metropolitan Museum of Art* by Mieczyslaw Horszowski (LP, Titanic Ti-78).⁵ Obscure? Yes! But here's a "harpsichord with hammers" that has no pedals and thus no pedal-actuated sustain. This perfectly quiet pressing (after an ultrasonic cleaning) of a wonderfully dry yet tactile

recording, made in the museum's André Mertens Galleries for Musical Instruments, brought the performance to life in my room—and from Horszowski's perspective.

The Solo 575s and the SAT tonearm were made for that instrument's rich, powerful lower register and its paucity of sustain, which were reproduced with unflinching control and solidity. The sonic integrity seemed well maintained up and down the keyboard, and was free of electronica.

Next up were Mozart's four horn concertos, with Lowell Greer playing a valveless natural horn (made in 1987, after an 1818 original made by Raoux, in Paris), and Nicholas McGegan leading the Philharmonia Baroque Orchestra, recorded in the chapel of San Francisco's Lone Mountain College (LP, Harmonia Mundi USA HMU-7012). The recording engineer was Wilson Audio Specialties' Peter McGrath, who was then still recording in the analog domain. (He now makes digital recordings in high-resolution surround sound.) Mastering was by the late, great Doug Sax at the Mastering Lab. I didn't know either man was involved before I removed the shrink-wrap. That's part of the fun of collecting records.

Through the Krells, Greer's horn had a warm, vivid, pleasingly soft sound, its image suspended between the speakers in a soundstage of moderate depth. The other horns, woodwinds, and strings were also nicely rendered,

3 See my review of the SAT arm in the July 2015 "Analog Corner": www.stereophile.com/content/swedish-analog-technologies-tonearm.

4 See my review in the May 2015 issue: www.stereophile.com/content/bricasti-design-m28-monoblock-power-amplifier.

5 In spite of its description as a pianoforte, the instrument on this recording is actually the earliest surviving instrument made by Bartolomeo Cristofori—a *gravicembalo col piano e forte* (harpsichord with soft and loud).—RL

measurements, continued

capacitor-coupled tube preamplifiers, though it would not have been a problem with MF's darTZeel preamp. The output impedance was very low, at 0.09 ohm at 20Hz and 1kHz, rising slightly to 0.11 ohm at 20kHz. (All figures include the series resistance of 6' of speaker cable.)

As a result, the modification of the amplifier's frequency response by the Ohm's law interaction between this impedance and that of our standard simulated loudspeaker (fig.1, gray

trace) was very low. The Solo 575's small-signal bandwidth was wide, with a -3dB frequency greater than 100kHz. The amplifier's reproduction of a 10kHz squarewave was therefore essentially perfect (fig.2), with short rise times and no overshoot or ringing. The unbalanced frequency response (not shown) was identical at high frequencies, but had a small (0.25dB) rise at 10Hz. Measured with the balanced input shorted to ground, the unweighted, wideband signal/noise ratio was very

good, at 78.2dB ref. 2.83V into 8 ohms. With an A-weighting filter, the S/N improved to 89.1dB. Considering its very high output power (see below), this is a high-dynamic-range amplifier. Looking at the low-frequency noise floor as the Krell drove a 1kHz tone at 2.83V into 8 ohms: While some power-supply-related spurious can be seen (fig.3), even the highest in level, at 120Hz, lies at just -100dB (0.001%).

Figs. 4 and 5 respectively plot the THD+N percentage in the Solo 575's

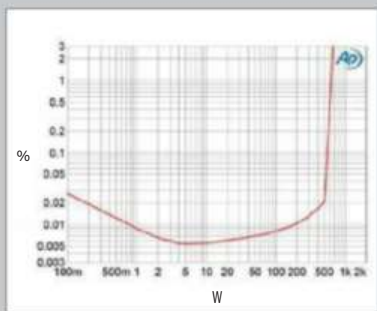


Fig.4 Krell Solo 575, distortion (%) vs 1kHz continuous output power into 8 ohms.

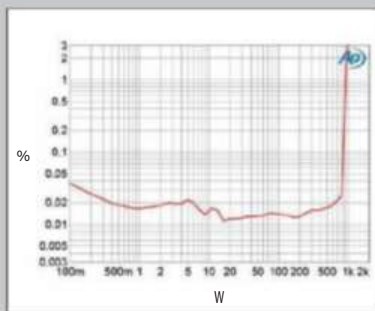


Fig.5 Krell Solo 575, distortion (%) vs 1kHz continuous output power into 4 ohms.

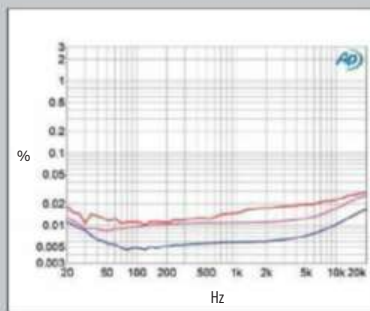


Fig.6 Krell Solo 575, THD+N (%) vs frequency at 12.65V into: 8 ohms (blue), 4 ohms (magenta), 2 ohms (red).

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I then compared an original pressing of Neil Young's *On the Beach* (LP, Reprise R 2180) with the reissue included in the boxed set of Young's *Official Release Series Discs 5-8* (4 LPs, Reprise 535704)—initially not to test the Krells, but as part of a review of the Young set. Chris Bellman had cut the new LPs from the analog master tapes (which I saw, stacked behind the board, during a visit last year to Bernie Grundman Mastering). I focused on one of Young's most elegant melodies: "See the Sky About to Rain." It opens with a tremoloed Wurlitzer electric piano laying out the chords, followed by a pedal steel guitar in the right channel, and a thick-sounding drum kit centered behind Young's voice.

Both versions sounded better than I'd ever heard them—but that was because I hadn't heard this album in many years, during which time my system has greatly improved. What I learned was that the original pressing's richer sound came at the great expense of image precision, focus, and clarity. The reissue put all of the instruments and voices in far more precise focus, though the warmth of Young's voice in the original was now somewhat harsher. The bottom end had greater punch and precision. Though I found the reissue better focused overall, especially the drums, I could make a case for either pressing—and both demonstrated that the Solo 575 didn't produce the velvety transients and textures I expect from class-A. With both pressings, the cymbals sounded neither romantic nor soft. In fact, they were a bit crunchier than I'd expected.

Class-A with an *?

During the time when I stopped analyzing the Solo 575s and simply enjoyed the musical ride, I was always, with fa-

miliar recordings, well aware of the augmented bass wallop: The effect was always pleasurable, and produced exhilarating rhythm'n'pace. Otherwise, I was able to let go of the darTZeels' more familiar sound and fully accept that of the Krells—though I was also well aware that the Krells' sound was less refined overall. What I expect from class-A amplification—textural richness, suppleness, delicacy of attack, generous sustain, and far-as-the-ear-can-hear decays—never materialized. But the far more expensive darTZeels (151,000 Swiss francs/pair, equivalent to \$157,000/pair at the time of writing) produced all of those in greater abundance.

Instead, the Solo 575s' overall attack was speedier, with less generous sustain and somewhat steeper/faster decay than through the darTZeel amps. However, those qualities better matched the Krells' punchier low-frequency personality. The Solo 575s breathed as a tightly sprung whole, producing a coherent sound from top to bottom.

I felt that, at higher SPLs, the Krells were adding a splash of hash and/or brightness, which somewhat offset the strong pluses of their tighter grip and rhythmic tautness. This was most audible with pop and rock recordings and vocals, and less so with recordings of unamplified instruments. But this characteristic wasn't to the point of being distracting or objectionable. It was audible only occasionally, and then gone. At the same time, when a recording contained very high frequencies, or a mix with a high-frequency EQ lift, those frequencies were reproduced with an unexpectedly sweet and silky quality.

The last record I played before returning to the darTZeels was an AAA reissue of Sam Rivers's *Contrasts*, recorded in December 1979 (LP, ECM 1162). Rivers plays soprano and tenor sax and flute, George Lewis plays a monstrous,

measurements, continued

output against power in watts into 8 and 4 ohms. Although the Krell's specified maximum power into these loads is very high, at a respective 575W (27.6dBW) and 900W (26.5dBW), the amplifier exceeded those powers, clipping at 625W into 8 ohms (28dBW) and 910W into 4 ohms (26.6dBW). (We specify clipping as when the THD+N reaches 1%.) Although I don't hold the wall voltage constant during these tests, the Solo 575 clipped at

1050W into 2 ohms (24.2dBW). This is a powerhouse of an amplifier!

It also offers very low distortion. I plotted how the THD+N percentage changes with frequency at a level—12.65V, equivalent to 20W into 8 ohms, 40W into 4 ohms, and 80W into 2 ohms—at which I could be sure that I was measuring actual distortion, not noise. Even so, the level of distortion was very low (fig.6), especially into 8 ohms, and rose only slightly at the top of the audioband.

And that distortion was almost purely third-harmonic in nature (fig.7), with some higher-order odd harmonics appearing at high powers and low frequencies (fig.8). Even so, other than the third harmonic at -80dB (0.01%), these all lay at or below -90dB (0.003%). Intermodulation distortion was similarly low (fig.9).

It is difficult not to be impressed by how Krell's Solo 575 measured. Amplifiers don't get much better.

—John Atkinson

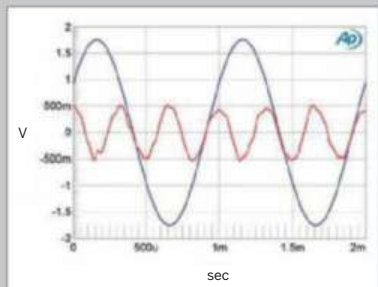


Fig.7 Krell Solo 575, 1kHz waveform at 50W into 8 ohms, 0.0068% THD+N (blue); distortion and noise waveform with fundamental notched out (red, not to scale).

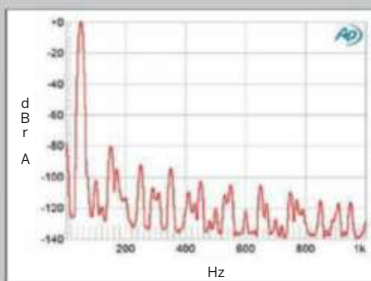


Fig.8 Krell Solo 575, spectrum of 50Hz sine wave, DC-1kHz, at 300W into 4 ohms (linear frequency scale).

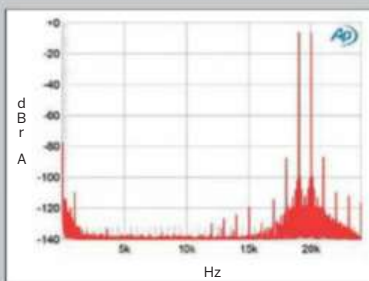


Fig.9 Krell Solo 575, HF intermodulation spectrum, DC-24kHz, 19+20kHz at 150W peak into 8 ohms (linear frequency scale).

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sometimes blatty trombone, Dave Holland is on bass, and Thurman Barker plays drums and mellifluous marimba. Mention free jazz to many—even some Frank Zappa fans—and they freak out. They're hung up. Why anyone who enjoys Zappa's good-humored, nonstructured meanderings wouldn't dig *Contrasts* escapes me. In "Circles," Lewis blats away in the left channel, Rivers blows on soprano and Barker drums in the center, and Holland bows in the left channel. It's closely miked and pleasingly raucous. At high SPLs, the entire record produces delirious chaos.

Contrasts brought forth all of the Solo 575's strengths: punchy, woofer-gripping lows, whether from plucked or bowed bass or growling trombone; pleasingly sizzly but not overly hashy cymbal strokes; and smooth, almost silky upper highs from Rivers's flute. The sound was brash yet involving, the images large and pleasingly confrontational. The stage was somewhat narrow and not especially deep.

Swapping in the darTZeel NHB-458s and playing the heavily panned drum solo in "Zip," also from *Contrasts*, put the differences between the two amps in sharp focus. The darTZeels produced less bottom-end grip but more nuance. Cymbals had more sizzle and less crunch, and there was more air around Rivers's flute. The soundstage was wider and deeper, and aural images on it were more compact and better focused, though edge definition was less severe. The overall sound of the far more expensive darTZeels was more refined, in terms of both transient performance and dynamic gradations.

In short, the class-A/B darTZeels simply sounded more like class-A amps than did the Krells. Listening to the Krells, I missed what the darTZeels did best; listening to the darTZeels, I missed what the Krells did best.

Playing a long set of tunes stored in the Meridian Sooloos—all from CDs ripped at full 16-bit/44.1kHz resolution—verified the positives and negatives revealed by this comparison, though they were always complementary in ways that made me want to keep *both* sets of monoblocks on hand, one pair each for different types of music.

For instance, in "There'll Be Some Changes Made," from Chet Atkins and Mark Knopfler's *Neck and Neck* (now 25 years old . . . how can that be?), via the Krells the taut bass line more effectively tapped my toes and carried forward the tune. The darTZeels' sound was more supple, expressing greater stage depth and, especially, width, and the guitars were better separated from the reverb. The same was true with the CD-resolution file of Chuck Berry's "Rock & Roll Music": the Krells exacerbated the glare of the reverb, but startlingly clarified the piano and, especially, some of the percussive accents buried by the more-than-six-times-the-price darTZeels.

Equivocating Conclusion

In the past few years, apart from my reports in "Analog Corner," I've reviewed mostly power amplifiers. Every one of them has sounded different from all the rest, and I could happily live with some, but not others. The Bricasti M28 monoblocks, for instance, which measured as well as the Krell Solo 575s, according to JA, didn't tickle my auditory pleasure centers as much, despite the Krells' somewhat coarser overall sound.

The Solo 575 monoblocks were in my system for well over a month, and during that time I enjoyed how they drove the Wilson Alexandria XLFs, especially on the bottom. But more important—because the sound was *whole*

ASSOCIATED EQUIPMENT

Analog Sources Continuum Audio Labs Caliburn turntable, Cobra tonearm, Castellon stand; Kuzma 4Point, Swedish Analog Technologies tonearms; TechDAS Air Force Two turntable with Graham Engineering Elite tonearm; Air Tight PC-1 Magnum Opus, Fuuga, Lyra Atlas & Etna, Miyajima Labs Zero (mono) & Madake, Ortofon Anna cartridges.

Digital Sources Simaudio Moon Evolution 650D transport-DAC; Lynx Hilo A/D-D/A converter; Meridian Sooloos Digital Media System; Pure Vinyl, VinylStudio LP-ripping software.

Preamplification Ypsilon Electronics MC-10L & MC-16L step-up transformers; darTZeel NHB-18NS, Luminous Audio Technology Arion, Ypsilon Electronics VPS-100 preamplifiers.

Power Amplifiers darTZeel NHB-458 monoblocks.

Loudspeakers Wilson Audio Specialties Alexandria XLF.

Cables Interconnect: Snake River Audio Boomslang S/PDIF, Stealth Sakra & Indra, TARA Labs Zero Evolution & Zero, Teresonic Clarison Gold, Wireworld Platinum Eclipse. Speaker: TARA Labs Omega Gold, Wireworld Platinum Eclipse 7. AC: Shunyata Research ZiTron Alpha Analog & Alpha Analog HC & Alpha Digital.

Accessories Shunyata Research Hydra Triton & Typhon power conditioners (2 sets); Oyaide AC wall box & receptacles; ASC Tube Traps; RPG BAD, Skyline & Abfussor panels; Stillpoints Aperture Room panels; Synergistic Research UEF products (various); Symposium Rollerblocks & Ultra platform; HRS Signature SXR, Stillpoints ESS, Finite Element Pagode stands; AudioDharma Cable Cooker; Furutech, Stein Audio demagnetizers; Furutech deStat; Audiodesksysteme Gläss, Loricraft PRC4 Deluxe record-cleaning machines.—Michael Fremer

from top to bottom—I found no fault with any single aspect of Krells' sound until I swapped them out for the far more expensive darTZeel NHB-458s.

The Solo 575s' taut bottom end produced always-entertaining rhythmic drive and pleasing musical flow. Their punchy but nonaggressive top end was likewise fast, and the surprisingly silky ultratop, which appeared when least expected and was always very welcome, added to the endless excitement and strong listening involvement these amps produced in me.

When I returned to the darTZeels, my system's sound was texturally more subtle overall, and in some ways more polite. Transients were more nuanced, the soundstage widened and deepened, and, particularly with classical music, I found the results more appealing—but I also happily listened to a great deal of classical music through the Krells.

If you listen mostly to classical and jazz, I recommend that you give the Solo 575s a listen—but proceed with caution. And if you listen mostly or exclusively to rock, and your speakers have good bottom-end extension, and—especially—if they thrive on lots of power and can deliver wide dynamic swings, you *need* to hear the Solo 575s. Just don't expect the usual buttery class-A sound: However well Krell's iBias circuit works to increase efficiency and thus decrease heat, it melts away some of that butter. Which is what left me wondering if iBias results in true class-A operation—or class-A*. ■



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ART DUDLEY

Leema Acoustics Essentials

PHONO PREAMPLIFIER

“The way that young people will get into high-end audio is not through streaming: It's through the LP.”

When that observation was offered during a recent phone conversation, I wrote it down word for word—not just because I agree with it, but because it was so remarkable: The audio-industry veteran who offered it owns a digital front end worth tens of thousands of dollars, and hasn't owned a turntable for at least a dozen years. Nevertheless, as became clear during the remainder of our conversation, he understands the dynamic that keeps vinyl at the top: a confluence of marketing psychology and genuine sonic goodness. The latter is evident to all whose listening priorities stress a colorful and tactile sound, and who realize the aptness, perhaps unique, of a physical medium in achieving a physical sound; the former is key to the choice one makes in transitioning from a market of intangibles to that of solid media a hobbyist can actually own, collect, and love.

But whether one chooses physical media or ether, and whether one buys into my or someone else's idea of involving sound, one axiom holds sway: We all like a bargain—especially younger people, many of whom reel from the one-two punch of usurious college loans and a still-less-than-snappy labor market. It is for them—and for school-teachers, laborers, pensioners, and other thoroughly normal people—that Leema Acoustics makes their Essentials phono preamplifier (\$749).



The contents of wall warts, like the contents of frankfurters and international trade bills, are secrets.

Description

Here are the two least-surprising things about the Welsh-made Leema Essentials phono preamp: It is built into a small (4.3" wide by 2" high by 3.9" deep) case of extruded aluminum, and it's powered by a wall wart.

The contents of wall warts, like the contents of frankfurters and international trade bills, are secrets. But the contents of the Essentials' extruded case proved more accessible, requiring the ministrations of only a T10 Torx-head ("star") screwdriver. Except for two pairs of RCA jacks and a TO-126-style voltage regulator, all mounted on the rear panel, the Essentials' component parts are mounted on a single circuit board. Perhaps the most conspicuous parts are two latching push switches, each addressed via a small opening

SPECIFICATIONS

Description Two-channel phono preamplifier. Inputs: 1 phono, switchable between moving-magnet and moving-coil. Phono gain: 36dB (MM), 62dB (MC). Input sensitivity: 4mV RMS for 250mV RMS output at 1kHz (MM), 180µV RMS for 250mV RMS output

at 1kHz (MC). Input impedance: 47k ohms (MM), 90 ohms (MC). Headroom: >26dB at 1kHz. Distortion: <0.02% at 1kHz.

Dimensions 4.3" (110mm) W by 2" (50mm) H by 3.9" (100mm) D. Weight: 2 lbs (0.9kg).

Serial numbers of units reviewed ES140708B, ES140704B.

Price \$749. Approximate number of dealers: 8. Warranty: 5 years.

Manufacturer Leema Acoustics Ltd., 16 Severn Farm Industrial

Estate, Welshpool, Wales SY21 7DF, UK. Web: www.leema-acoustics.com. US distributor: Bluebird Music Ltd., 275 Woodward Avenue, Buffalo, NY 14217. Tel: (416) 638-8207. Web: www.bluebirdmusic.com.

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on the rear panel—one for selecting between low (moving-magnet) and high (moving-coil) gain, the other offering a selectable “rumble” filter with selections labeled FLAT and CUT, both switches supplemented with corresponding Axi-com relays. The real stars of the show are complementary pairs of FZT653 (NPN) and FZT753 (PNP) surface-mount bipolar transistors.

And that’s about it. The quality of the parts seemed decent enough, insofar as one can tell with a product as small as this, and the construction quality was similarly competent. As with most electronics of its size and price categories, the Leema’s extruded case appears rather generic, yet both it and the fasteners used in its assembly are of slightly above-average quality. The packaging is also decent enough, and the single-sheet instructions acceptably helpful.

Installation and setup

The extremity poles of my audio-setup experience are, at one end, Linn’s Majik Ethernet-based network music player and, at the other, the VPI Magic Brick. Happily, the Leema Essentials phono preamp was closer to the latter in degree of challenge. Installation was a simple matter of plugging my tonearm-output cables into the Leema’s input jacks, and running an extra interconnect pair from the Leema’s output jacks to a pair of line-input jacks of my Shindo Masseto preamp. I plugged the wall wart’s cable into the appropriate jack on the back of the Leema, connected said wart to the AC line, *et voilà*: an LED on the front of the power-switch-less Leema told me all was well.

Or was it? One day, earlyish in the listening period, I set about playing a record—a stereo record, remarkably—and noticed that one channel was silent. There followed the usual cable-swapping jiggery-pokery (pace Scalia) until I was satisfied that the fault was in the star-screwed Leema.



The Essentials’ circuitry is carried on a neatly laid-out multilayer circuit board, with surface-mount components.

I then got in touch with Leema’s US distributor, Bluebird Music, who immediately dispatched a new unit. It is on the uninterrupted performance of that second sample that my listening observations are based.

At times during my listening, I connected the Leema’s input jacks to the output jacks of my Hommage T2 step-up transformer, during which I moved the gain switch on the back of the Essentials to its low-gain (MM) position; I also left the Leema in low-gain mode for use with my high-output (5.75mV!) EMT OFD 25 pickup head (see below). Otherwise, I kept the Essentials in its high-gain (MC) mode.

MEASUREMENTS

I measured the Leema Acoustics Essentials phono preamplifier (serial number ES140704B) using my Audio Precision SYS2722 system (see www.ap.com, and the January 2008 “As We See It” at www.stereophile.com/content/measurements-maps-precision). As always with phono stages, I experimented with the grounding between the Essentials and the Audio Precision system to get

the lowest level of noise.

The voltage gain at 1kHz was 35.7dB with the Leema set to MM (moving-magnet), and 61.2dB when set to MC (moving-coil). Both values are very close to their specifications, and the preamp preserved absolute polarity (*ie*, was non-inverting) at both settings. The input impedances for both the MM and MC settings were also very close to spec. The MM impedance was 46k ohms at 20Hz and 1kHz, dropping inconsequentially to 40k ohms at 20kHz; the MC impedance was 92 ohms at all audio frequencies. The output impedance at 20kHz and 1kHz was very low, at 60 ohms, rising to a still low 432 ohms at 20Hz due to the presence of a coupling capacitor.

The Leema’s RIAA equalization (fig.1) was well matched between the channels, and flat from 30Hz to 1kHz. Above 1kHz the response sloped gently up, reaching +0.25dB left and +0.4dB right at 20kHz. This should not be

audible. At the other end of the audio-band, the output was down by 1dB at 10Hz without the Bass Cut switched into circuit (blue and red traces), -1dB at 43Hz and -3dB at 22Hz with Bass Cut active (cyan, magenta).

The Leema’s channel separation was very good, at 80dB in both directions above 1kHz. The Essentials was very quiet, its wideband, unweighted, MM signal/noise ratio (ref. 1kHz at 5mV, taken with the input shorted) measuring 70dB, and improving to 81dB when A-weighted. The MC ratios (ref. 500µV at 1kHz) were almost as good, at 66dB and 76dB.

With its lower-than-usual gain in MM mode, it came as no surprise to find that the Essentials had a superb overload margin: about 25dB throughout the audioband. It was almost as good in MC mode, at 22dB across the band.

With low RIAA error, noise, and crosstalk, the Leema’s distortion was

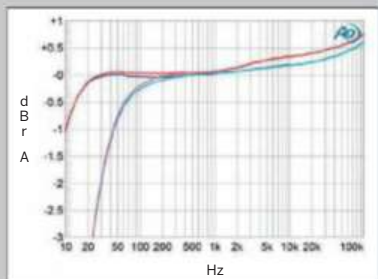


Fig.1 Leema Acoustics Essentials, response with RIAA correction (left channel blue, right red) (1dB/vertical div.).

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Use of the Leema's rumble filter, which performs as advertised, never seemed necessary: My observations are based solely on the Essentials' unfiltered musical utterances.

Listening

Strange that one of the best-known titles from EMI's rightly loved ASD stereo LPs—a series known for classic performances in exceptional sound—falls short on one of those two counts.

Yehudi Menuhin's 1966 recording, with Sir Adrian Boult and the New Philharmonia Orchestra, of Elgar's Violin Concerto (EMI ASD 2259), itself the hotly anticipated follow-up to Menuhin's 1932 recording of the work (as a teenager! with Elgar conducting!), is hobbled by sound that is, as John Cleese would say, downright mediocre. Through even moderately good playback gear, the first thing one hears from it is a big, quacky, rosiny murk over toward the left, where orchestral violins ought to be. (Oddly, it gets better after that, as if a technician had reached for an equalization knob just a few seconds too late—and then it gets worse again, then better again, and so on.)

I don't in the least exaggerate when I say that the (relatively) inexpensive little Leema made better sense of the recording than 90% of the other phono preamps I've heard in recent years, whether freestanding components or phono stages integral to full-function preamplifiers. That the



Leema Acoustics Essentials phono preamplifier, rear panel: note rumble-filter and gain switches, and nicely detailed trash receptacle.

I heard tangled skeins of sound resolve into flutes, clarinets, a bassoon, a contrabassoon, and an oboe.

massed instruments in question were identifiable as violins is true praise enough for some—yet I also heard tangled skeins of sound resolve into flutes, clarinets, a bassoon, a contrabassoon, and an oboe, all sparingly and ingeniously employed in the most Elgarian of ways. And when Menuhin's violin entered . . . well, it was deeply saturated velvet. Which is pretty much all one needs to know.

That was with my Denon 103D cartridge going straight into the Leema, the latter set for high gain. The sound and music making were remarkably good—so, of course, I did what any audiophile would do: I changed things, just to see what would happen. (But I did it here at home, not in Reno.) Specifically, I switched the Leema down to low gain, and preceded it with the Hommage T2 step-up transformer. And then . . .

The orchestra got bigger—crazy bigger—and the swooping of the woodwinds became more physical, as did the accents in the double basses. But the music making, the playing of notes and beats, the conveyance of intellect and emotion, was essentially the same. I heard, in the same, single moment, why someone would pay \$5000 for the Hommage and why most anyone else would be happy just paying their \$749 for the Leema.

But one little thing from that last listen got stuck in my mind, so I picked up the needle and started the record again. But this time, before I did, I hustled over to the backs of my Altecc Valencia speakers and switched their cables, black for red and red for black. And there it was: Center fill became more center-full, and everything in the recording that should have had a sense of touch—plucked strings, for example—had even more of a sense of touch. I couldn't help wondering if the output-signal polarity for the Leema's low-gain setting is inverted with respect to the output-signal polarity for its high-gain setting; I anxiously await

measurements, continued

also low. Fig.2 shows the spectrum of the Essentials in MM mode, driving a 1kHz tone at 1V into 100k ohms (equivalent to an input level of 17mV). The only harmonics visible above the noise floor are the second, at -76dB (0.015%), and the third, at -99dB (0.001%). The picture wasn't significantly different in MC mode. While reducing the analyzer's load impedance to a very low 600 ohms raised the level of the second harmonic, it still lay at -60dB (0.1%), which, given the innocuous nature of

second-harmonic distortion, is low enough. The Essentials also had low intermodulation distortion (fig.3), the second-order difference product resulting from an equal mix of 19 and 20kHz tones lying at -81dB (0.01%). However, there is a peculiar rise in the noise floor visible in this graph between 25kHz and 30kHz.

It was a pleasure to measure a product as well sorted as Leema's Essentials phono preamplifier, especially considering that it sells for less than \$1000. —John Atkinson

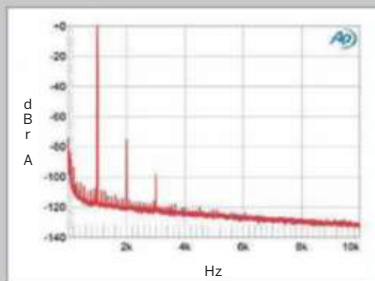


Fig.2 Leema Acoustics Essentials, spectrum of 1kHz sinewave, DC-10kHz, at 1V into 100k ohms (linear frequency scale).

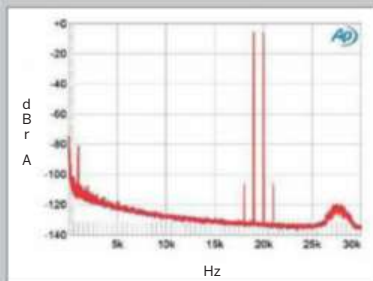


Fig.3 Leema Acoustics Essentials, HF intermodulation spectrum, DC-30kHz, 19+20kHz at 1V peak into 100k ohms (linear frequency scale).

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the results of John Atkinson's measurements.

With the Hommage still upstream, I proceeded to that other masterpiece of the Space Age: *Lick My Decals Off, Baby*, by Captain Beefheart & the Magic Band (Straight/Reprise RS 6420). For ages I've been torn between *The Spotlight Kid* and *Clear Spot* as my favorite Beefheart albums. But now, playing *Decals* on my Thorens TD 124 with my Denon cartridge mounted in the brand-new Abis SA-1.2 tonearm (Follow-Up to come) and feeding the Leema Essentials, I realized anew not only the album's boundless creativity—it's the sole Beefheart record in which the dissonance and angularity of *Trout Mask Replica* are nudged just one degree closer to the mainstream and no further—but also the startlingly good quality of the recording. Through the Leema, the wildly-ahead-of-its-time electric-bass playing of Mark Boston (aka Rockette Morton), in particular, leaped from the groove, with equal parts whip-impact and good timbral color. Awesome!

Those qualities were especially evident in "Peon" and "One Red Rose That I Mean": instrumentals that lean more toward the episodic than the straight-ahead boogie of "The Smithsonian Institute Blues (or the Big Dig)" and "I Love You, You Big Dummy." For their part, the latter songs were served well by the Essentials' essentially good sense of musical timing and momentum. I can't recall a single record rendered boring by this unswervingly direct little box. Also awesome! The Leema had me suffering from awesomnesia!

The Leema's appeal wasn't limited to music of size: It did a lovely

job with the simple harp-and-voice arrangement of "Esme," from Joanna Newsom's *Have One On Me* (Drag City DC390): a lyrically complex yet rhythmically straightforward song that unwinds like a spring, with Newsom's singing gaining in focus and strength as the song progresses. Through the Leema, her voice had fine spatial focus, too, sounding present and substantial—not wispy at all. Believable spatial cues were also uncovered from the sound of Newsom's Lyon & Healy harp—especially toward the end of the song, when note decays gave a good sense of the size of the recording

I can't recall a single record rendered boring by this unswervingly direct little box.

space. My only complaint: Through the Leema, that harp didn't have nearly the substance, scale, or purr that I hear through the phono stage of my Shindo Masseto preamp, or through a recently borrowed Shindo Aurieges standalone phono preamp (actually labeled, with typical Japanese charm, an Equalizer Amplifier).

A few words about mono (though I was tempted to write just one): In low-gain mode, the Leema let EMT's OFD 25 and OFD 15 single-channel pickup heads sound very good indeed: colorful, impactful, downright lusty. Charlie Parker and Dizzy Gillespie's *Bird and Diz* (Verve/Clef MGV-8006)—a record whose sound varies wildly depending on the pressing—had great drive; ditto my favorite mono Bill Monroe albums, which added to the

ASSOCIATED EQUIPMENT

Analog Sources Garrard 301, Thorens TD 124 turntables; EMT 997, Abis SA-1.2 tonearms; EMT OFD 25 & OFD 15 & TSD 15 pickup heads; Denon DL-103, Miyajima Premium BE Mono II cartridges.

Digital Sources Halide Designs DAC HD USB D/A converter; Apple iMac G5 computer running Audirvana Plus 1.5.12; Sony SCD-777 SACD/CD player.

Preamplification Hommage T2 step-up transformer, Shindo Aurieges phono preamplifier, Shindo Masseto preamplifier.

Power Amplifiers Shindo Corton-Charlemagne (monoblocks) & Haut-Brion (stereo).

Loudspeakers Altec Valencia, DeVore Fidelity Orangentan O/96.

Cables USB: Wireworld Revelation 2.0. Interconnect: Audio Note AN-Vx, Nordost Blue Heaven, Shindo Silver. Speaker: Auditorium 23, Nordost Blue Heaven.

Accessories Box Furniture Company D3S rack (source & amplification components), Audiodesksysteme Gläss Vinyl Cleaner.—Art Dudley



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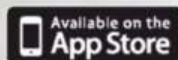
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mix a fine, convincing clatter of banjos and mandos. Interestingly, unlike with either of the Shindo phono sections at my disposal, the Leema was less happy being preceded by both an Hommage T2 transformer and a high-output, single-channel EMT pickup: a crazy-on-paper pairing that, for some unfathomable reason, works brilliantly with a tubed phono stage of high headroom. Reverting to the Leema's high-gain setting, I also tried my Miyajima Premium BE Mono II cartridge, and

Through the Leema, Joanna Newsom's voice had fine spatial focus, sounding present and substantial.

was reminded at once that the Leema is less a happy lens than a teller of truths: The Miyajima sounded its usual good, tight, very pleasantly substantial self—but, through the Leema even more than through the Shindos, the Miyajima sounded like a skillful but cautious and law-abiding motorist, as compared with the EMT OFD 25's Alfa Romeo 4C navigating the Amalfi coast at sunset.

Shortcomings? Especially when pushed hard, the Leema was a little grainy rather than naturally, wetly smooth. (*Then don't push it hard* is not the cure I have in mind.) The horns in the climaxes of that Elgar Violin Concerto got on the Leema's bad side and sounded just a little coarser than through my combo of Hommage T2 and Shindo Masseto phono section, and the same was true of Nancy Wilson's voice on *Nancy Wilson/Cannonball Adderley* (Capitol SM-1657). And, again, with music of virtually every sort, the Essentials didn't have the scale or texture or really deeply saturated colors of Shindo's Aurieges Equalizer Amplifier—which costs about nine times as much as the little box from Wales, making the comparison unfair, if fun. Not unlike fishing.

Conclusions

[The sound of snapping fingers, barely perceived. A slap on the face, followed by a second, harder slap—very much perceived. A shrill voice:]

"Mr. Dudley? Mr. Dudley? Wake up. You've been dreaming. There is no

such thing as a schoolteacher or a pensioner who can afford \$749 for a phono preamp. They can scarcely afford the \$400 or so they'll have to spend on a decent entry-level turntable, tonearm, and cartridge combination. What in God's name were you thinking?"

I guess you're right: That sort of thinking is limited to obsessives such as I. But if we are privileged aesthetes, what do we call the people who spend \$2000, or \$8000, or \$40,000 on a phono preamplifier—other than, perhaps, *very* privileged aesthetes? I remain comfortable thinking of \$749 as relatively affordable.

In conversations in which perfectionist audio requires defending, one of my favorite games is to compare the prices of various consumer goods of the early 1970s to those of today—and then to show, by contrast, the extent to which entry-level perfectionist goods can offer quite reasonable value. For example, in the early 1970s, a brand-new Porsche 914 sold for \$3600, the average home for less than \$25,000, and a pair of EPI 100 loudspeakers for \$200. By contrast, today's cheapest Porsche costs a little over \$52,000 and the average house sells for just under \$200,000—and most consumers balk at spending more than a few hundred dollars on a complete playback system. (And mainstream "technology" writers advise shoppers against spending \$400 on a high-resolution music player because low-resolution players are "good enough.") It's a fun game, and a useful rhetorical device with a high WTF factor.

The problem is, when it comes to phono preamplifiers, there's no basis for comparison. The product category didn't even exist until the mid-1980s, which was when most manufacturers realized they could slack off and sell line-only preamps and integrated amps for line-plus-phono prices: a pretty good scheme, I admit. The problem: To which historical appliance does the audio consumer of 2015 compare an \$749 phono section? To a fragment of a receiver or integrated amp that, in 1971, sold for maybe \$200? Beats me.

Regarding perceived value and perceived performance, we are left to deal with absolutes. It is with those absolutes in mind that I write this: Although it's a leap to say that I see \$749 inside that little black box, I hear that and more in the sound of Leema Acoustics' Essentials phono preamplifier. Recommended. ■

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JOHN ATKINSON

Antipodes DX Reference

MUSIC SERVER



Perhaps because I grew up in post-WWII England, with austerity and food rationing the norm, I learned at an early age the value of frugality. It was a financial stretch for me to buy, in the late 1960s, my first real audio system: Garrard SP25 turntable with Audio-Technica cartridge, Kenwood integrated amplifier, Wharfedale Super Linton speakers. Even when I could afford to upgrade the system, other than replacing the Garrard with a Thorens TD 150 and the Audio-Technica with a Shure, I went the DIY route. Back then, in the early '70s, I assumed that the advent of op-amp chips like the Fairchild Semiconductor μ A741 would make it possible for me to design and make, for example, a good-sounding preamplifier for a lot less than it cost to buy one from an established manufacturer. That assumption turned out to be wrong, of course, but frugality was, by then, a habit: too ingrained for me to shake entirely.

And I still haven't. When, at the end of the last century, playback of digital audio files became domestically feasible, it never crossed my mind that I should explore expensive dedicated hardware. The frugal route would be for me to repurpose something I already owned: my bargain-basement, no-name Pentium PC.

As I wrote in my review of the AudioQuest JitterBug USB noise filter in the September issue: In 2006 that PC had been replaced by an inexpensive G4 Mac mini, which I could use with a keyboard, mouse, and display I already owned—frugality incarnate! In 2012, the G4 Mac mini was itself replaced by a Mac mini fitted with a 2.7GHz Intel i7 processor and 8GB of RAM. Similarly, the file-playing software progressed from WinAmp (free) to iTunes (free) to the affordable Pure Music and Audirvana apps.

Then, as also mentioned last month, my 2012 Mac mini died.

Enter the Antipodes DX Reference

Perhaps it wasn't a cosmic coincidence that, just before the Mac mini's iDeath—both its logic board and power supply were fried—*Stereophile* had been offered for review a sample of a dedicated music player, the Antipodes DX Reference. Antipodes Audio, a New Zealand-based company that's new both to me and to the US, makes a range of music players; the DX Reference, their top model, costs \$6500 with 1TB internal solid-state storage, or \$7500 with 2.7TB. (I was sent the latter.) Also available is the Antipodes DV Zero, intended for use with NAS drives—it is a server without

SPECIFICATIONS

Description Media Server running Linux (Fedora release 20), VortexBox v.2.3, Squeezebox Server 7.8.0. Formats supported: WAV, AIFF, FLAC, ALAC, AAC, M4A, MP3, Ogg, DSF, DFF. Resolution and sample rates supported: PCM up to 32-bit/384kHz, DSD64 and

DSD128. Inputs: USB 2.0 Audio 5V On, USB Audio 2.0 5V Off, Ethernet. Output: USB for backup, stereo analog audio/S/PDIF TosLink on single 3.5mm jack.

Dimensions 16.75" (430mm) W by 3.3" (85mm) H by 10.65" (273mm) D. Shipping weight: 15.4 lbs (7kg).

Serial number of unit reviewed 701173.

Price \$7500 with 2TB internal storage (2.7TB as reviewed), \$6500 with 1TB, \$5000 as DV Zero with no internal storage. Approximate number of dealers: 7.

Manufacturer Antipodes Audio,

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internal storage—for \$5000. At prices such as these, the products of Antipodes Audio are about as far as it is possible to get from my frugal devotion to general-purpose computers.

But the DX is still a computer, albeit a very specialized and special one.

One thing to rule over them

Using a general-purpose computer to play audio files should work—but, in practice, the computer must fit its audio-file-serving duties into all the other things it has to do. (Windows users: Open the Task Manager app and check just how many processes are running even when your PC apparently has nothing to do.) By contrast, the Antipodes machine does just one thing: It retrieves audio files from its own storage or from network-attached storage (NAS), and feeds the data to its two USB 2.0 ports. (There is also a 3.5mm jack sourcing both a stereo analog signal and an optical S/PDIF datastream, as well as another USB port for plugging in a removable drive for backup.)

There are no peripherals: just a slot-loading DVD/CD drive to rip discs, and an RJ45 Ethernet port to permit control via another computer on the network, or via WiFi using an iOS or Android device. Using the Linux operating system, the Antipodes DX runs just two apps: Vortex-Box for setup, control, and disc ripping (see <http://info.vortexbox.org>); and, to manage the music library, Logitech's Squeezebox Server (formerly the Slim Devices SlimServer, SqueezeCenter, and Squeezebox Server; it supports gapless playback). The Antipodes server supports a wide range of audio-file formats: WAV, AIFF, FLAC, ALAC, AAC, M4A, MP3, Ogg, DSF, and DFF. PCM-format resolution can be up to 32 bits, with sample rates up to 384kHz. DSD64 and DSD128 files can be played.

The heart of the DX is a motherboard featuring a quad-core Intel Atom processor and 4GB of DDR3 RAM, the latter to cache the selected playlist for direct playback. According to Antipodes' founder, Mark Jenkins, the transfer from long-term storage to RAM is managed "in a better and more consistent way, which does improve sound. Exactly how the files are placed into RAM and read out of RAM to the audio output is very important to the sound quality."

The DX's internal storage comprises Samsung solid-state drives (SSDs) with 3D V-NAND technology. However, Jenkins elaborates that Antipodes is always testing new drives as they enter the market. "Each server is tuned to work with the particular drives used," he adds, "as each can generate a slightly different noise spectrum."

Jenkins clarified this statement in a recent e-mail:

Accepted digital theory suggests that regenerating the signal in the DAC should cure all prior interference with the digital signal. But...as with all other areas of audio, it turns out everything matters in computer audio too. One area that appears to matter a lot is what happens in the server's RAM. For example, we find [that] an uncompressed FLAC file sounds a lot better than a compressed FLAC file, and the only thing that is different is that, with the latter, the file has to be decompressed in RAM (becoming identical



The DX includes a DVD/CD drive to rip discs into uncompressed FLAC files.

to the former file) before the next step. Just that little bit of extra activity in RAM is enough to make a significant difference (as we have demonstrated in public blind tests).

When we mount external storage, at a certain level of abstraction, it is being treated in the same way as playback from internal storage. That is, the file is requested by the server software and then transferred in block mode into RAM.

Files stored internally flow over a SATA interface, and externally mounted files flow over Ethernet. The way we manage music files from internal storage in and out of RAM has turned out to be very important to the sound, and we can [get close to] this when we use mounted external storage over Ethernet. But UPnP/DLNA is different again. Just because it also comes over Ethernet, it does not mean the file arrives in the same way.

For a start, we are less able to manage the process the way we would like and the stack is more complex. Amongst other things, UPnP/DLNA is designed to traverse a range of situations (such as playback of files that are too large to fit in the RAM of the DLNA Renderer) and so has high overhead with a lot of request and response activity...More activity is always a bad thing, and worse when it directly impacts the playback software stack.

When Ethernet is involved (whether mounting or using UPnP/DLNA), we hear less immediacy, and a softened vagueness to images. Some people may actually prefer this by the way, calling the sound more romantic or less aggressive. System context is, as always, important. The simple point is that while mounting over Ethernet suffers a little from this, when using UPnP/DLNA (and internet streaming) this effect is several times greater...

The best sound comes from the DX using internal storage. Second best is the DV Zero playing from a NAS; third best is the DX playing from a NAS; fourth best is the DV playing from internal storage (using our custom HDDs); fifth best is the DV (with internal HDDs) playing from a NAS. And by the way, if we add a small SSD to the DV to hold the playlist we get slightly worse sound.

Physical plant

Inside the DX Reference's polished aluminum box, behind the right-hand side of the machined front panel, is a large toroidal transformer; behind it is a linear (as contrasted with switch-mode) power supply. The disc transport is at the center, and behind it and to the left is the processor motherboard. A small board from the computer-audio specialty firm SOTM, above and to the left of the motherboard,

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handles IO duties. The only controls are a blue illuminated button on the front panel to toggle the DX between standby and on, and a rear-panel on/off switch.

Setup...

...was trivially easy. I used an AudioQuest Vodka Ethernet cable to connect the DX Reference to my WiFi router, and an AudioQuest Coffee USB cable to link the DX to either my PS Audio PerfectWave DirectStream D/A processor or Bel Canto Design's Black ASC1 preamplifier (reviewed in this issue), and turned the DX on with its rear-panel switch. From cold, the DX took about three minutes to boot up, after which it appeared as a shared device on the computers on my network. I accessed its webpage with the browser on my repaired Mac mini (the address is <http://antipodes1.local/>), and the VortexBox setup screen appeared. The Configure Player screen then let me define the PS Audio and Bel Canto as two of the five allowable outputs, and I was in business.

The DX's two USB output ports offer the choice of including the usual 5V DC supply or just the data connections. USB-connected DACs often derive their receiver's power from the bus, to isolate the analog circuitry from the digital, in which case the 5V port should be used. But if the USB receiver is powered by the supply of the DAC in which it is housed, the DX's data-only port should be used. The PS Audio DirectStream needed the bus power for the receiver, whereas Michael Lavorgna reports that the Auralic Vega does not.¹ In light of my enthusiasm for AudioQuest's JitterBug, I used that product to filter the Antipodes' USB feed.

Next was to load the DX's 2.7TB SSD with music. This was simplicity itself: I dragged'n'dropped into one of the DX's music folders my entire iTunes library, as well as my library of DSD files from the FireWire drive I use with the Mac mini. Then I ripped some CDs, using the DX's drive and the VortexBox DVD/CD Automatic Ripper screen. This saves the ripped tracks as uncompressed FLAC files, but also lets you mirror the ripping to Apple Lossless or MP3 versions. As you rip a disc, the DX accesses Internet databases to add metadata—disc, track, and performer information, etc.—as well as cover art. However, with some very recent CDs—such as this issue's "Recording of the Month"—the DX was unable to find the metadata. (By contrast, iTunes had no trouble doing so when I ripped this CD with an external drive attached to the Mac mini.)

Once Squeezebox Server had scanned the files I'd added, all the artists, albums, and tracks could be accessed with the Squeezebox Server webpage. I am well familiar with this interface from using it with the Logitech Transporter I bought in 2007.² However, I much preferred controlling the DX with my iPad mini running the iPeng 8 iOS app (available in the iTunes App Store in a version for use with Squeezebox Server for \$8.99).

Right from cold, there was an inviting quality to music sourced from the DX Reference.

The top two USB ports offer the choice of bus power on or off.

The final part of setup was to see what streaming services Squeezebox Server allowed. I could see Internet Radio, Qobuz, and Spotify, but not Tidal. However, there was a name with which I was unfamiliar, ickStream. According to Mark Jenkins, "ickStream is a general interface for compliant streaming services and you can log in to Tidal when you open ickStream." I did just that, creating a free ickStream account and linking my Tidal account to it. The interface was a bit clunky, but workable. The final word from Jenkins: "to be fair, the Tidal integration is not great but that will be solved when we get Roon in-board.³ We think that is a couple of months away."

Listening

The DX Reference got noticeably warm after a while, its top plate measuring 99°F. Antipodes says that the DX should be left on continually, and that it will sound its best after the first week or so. But right from cold, there was an inviting quality to music sourced from the DX Reference.

One of the first LPs I bought, back in 1963, was *The Free-wheelin' Bob Dylan*, in mono. I hadn't listened to the album in years. But triggered by my purchase of a PonoPlayer, I downloaded the 24/96 stereo transfer of the recording from PonoMusic World. My favorite track used to be "Corrina, Corrina"—Taj Mahal's performance of this song at the 1995 Stereophile Show in Los Angeles remains a highlight of my live-music experiences—and playing from the DX the FLAC file of this song, with its loping rhythm, made a shiver run down my spine. The decades were shed, and I was hearing this song through my teenage ears. A tangible Bob was *there*, standing between the GamuT speakers, telling me he has a bird that whistles, a bird that sings. Sam Tellig used to go on and on in his reviews about "palpable presence," to the point that the phrase has become a cliché. But there are times when all you can use is a cliché—Dylan's presence was indeed *palpable* with the DX.

I went back to the Mac mini and played the same track, or at least a version transcoded into Apple Lossless with Stephen Booth's Max utility. I was hearing the same DAC, receiving data via the same USB port. Same amps, same speakers, same cables. Same tonal quality, too—but the sound was that little bit grayer, flatter, thinner from the Mac:

1 Michael Lavorgna reviewed the Antipodes DX Reference for our sister site, AudioStream: see www.audiostream.com/content/antipodes-reference-series-dx-music-server and 'content/antipodes-reference-series-dx-music-server-part-2'.

2 See www.stereophile.com/mediaservers/207slim/index.html.

3 See Jon Iverson's evaluation of the Roon system elsewhere in this issue.



△GEEK OUT

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let's say that you're more demanding than the average audio hobbyist.

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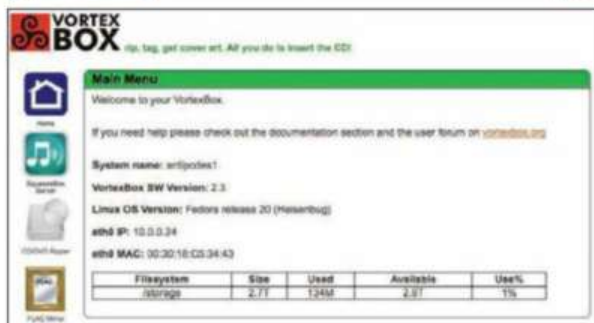


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Clockwise from bottom left: The VortexBox home screen; how the Antipodes DX looks on a networked Windows PC; Squeezebox Server's playback screen.



less Dylan and more Zimmerman, if you will.

These differences persisted with every track I played, but the comparisons were not, of course, instantaneous, as each DAC has but a single USB port. It was time to do some A/B tests, and I rigged the comparisons in favor of the Mac mini: It remained connected to the PS Audio DirectStream DAC via USB, but I used VortexBox to set the DX's output

to the 3.5mm jack, and directed its S/PDIF output to the PS Audio with a 15' length of generic plastic TosLink.

Playing "A Case of You," from Joni Mitchell's *Both Sides Now* (24/96 ALAC file ripped from DVD-A, Reprise 47620-9⁴), the computer was now closer to the Antipodes. But dammit if the dialog between Joni's cigarette-soused contralto and Wayne Shorter's soprano saxophone didn't still sound that important bit better when played from the Antipodes server. It was more—here's that overused adjective again—palpable, with the individual sonic objects better differentiated from one another.

I reconnected the DX to the PS Audio⁵ via USB and cued up the DSD file of violinist David Abel and pianist Julie Steinberg performing Brahms's Violin Sonata No.1 (Wilson Audiophile). *That's odd*, thought I: *iPeng* correctly identifies the format as "Sample Size '1Bits,' Sample Rate '2,822.4kHz.'" But the

CONTINUED ON PAGE 203

⁴ See www.stereophile.com/recordingofthemonth/444/index.html.

⁵ Newly updated with PS Audio's Yale operating system.

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JON IVERSON

Roon Labs Roon v.1.0

MUSIC-PLAYBACK APPLICATION

There are dozens of music-playback programs for computers, touchpads, and smartphones, ranging from standalones such as Amarra, Audirvana, JRiver, Pure Music, and VLC to programs that are integrated with a specific distribution service: Pandora, Spotify, Tidal, and, of course, iTunes. Still others, such as Sonos, are integrated with a dedicated hardware product.

All such applications are designed to do the same job: help you sort through thousands of possible music choices and pick a tune to play right now, or set up a playlist for the next few minutes or hours. In recent years, the product that arguably (although there's no doubt in my mind) managed these things best in the context of a large music collection was Sooloos: an intuitively useful music-management application combined with a single-unit touchscreen, CD-ripping transport, storage drive, and server.¹

Into this fray steps a new company, Roon Labs, with a standalone desktop app intended to take the sorting of music to the next level, for both audiophiles and regular music lovers.

The Road to Roon

Though Roon Labs is less than a year old, the company's pedigree goes back more than a decade, to when a small group of music and tech nerds began pondering better ways to manage their large collections of digital audio files. A couple years later, Sooloos LLC was established, and their first products hit the market in 2006. In late 2008 Sooloos was bought by Meridian Audio, and several Sooloos employees remained with the company, to continue to develop the Sooloos software and touchscreen-intensive hardware, as well as to create a custom music-player application that Meridian licensed to Hewlett-Packard, under the name HP Connected Music.



Top: A tireless tour guide: The Roon experience is rich with metadata. **Bottom:** As well as iOS, the Roon control app also runs on Android devices (v.4.4+, 5.0 recommended).

Fast forward to last January's 2015 Consumer Electronics Show in Las Vegas, where I first experienced the Roon Labs system in beta form, discreetly demonstrated in a quiet lounge at the Mirage hotel. Michael Lavorgna, editor of our sister online publication AudioStream.com, had joined me and the three founders of Roon Labs, and the beta product was booted up on a laptop. The product had yet to be named,

¹ The Sooloos system is now called the Meridian Control 15. See my review of that product's predecessor, the Sooloos Music Server System, in the September 2008 issue (Vol.31 No.9): www.stereophile.com/mediaservers/908sooloos/.

SPECIFICATIONS

Description Cloud-based music-playback software

System requirements

Mac OS X 10.9 (10.10 recommended), Windows

7 (8.1 recommended), compatible players/streamers from partnering hardware manufacturers.

File formats supported

WAV, AIFF, FLAC, ALAC, OGG, DSF (built-in); MP3, AAC (OS-dependent)

Price \$119/year, \$499/lifetime.

Manufacturer Roon Labs LLC, 96 Round Hill Drive, Briarcliff Manor, NY 10510. Web: <https://roonlabs.com>.

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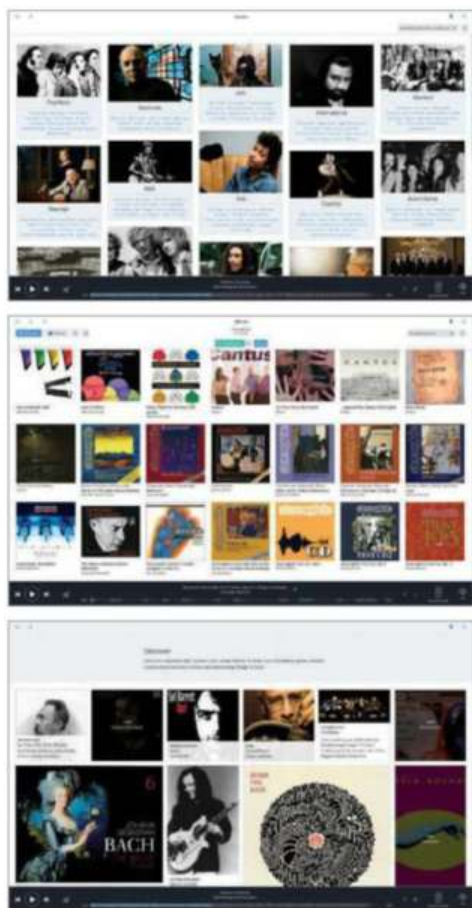


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Roon offers a rich metadata experience, including (top to bottom): the "Genre" view; the "Album" view (featuring here all the *Stereophile* CDs); and the "Discover" view.

though discretion forbids me from outing the several cringe-worthy ideas then offered. (Well, I do remember one name that contained the word "cow"...) In the end, they just called it Roon.

Michael and I were impressed with what we saw, but were sworn to secrecy until an announcement could be crafted that explained the new company's relationship with Meridian—where all three Roon Labs founders had recently been employees—and a reasonably sensible release date and name could be agreed on.

Roon Labs was spun off from Meridian in February 2015, and Roon v.1.0 was officially announced in early April and released in mid-May. Roon Labs continues to have a close business relationship with Meridian, as well as new relationships with such hardware manufacturers as Auralic, dCS, Linn, PS Audio, and others still to be announced.

Description

Roon v.1.0 supports most file formats, DSD included, at resolutions up to 24 bits and sample rates up to 384kHz, and is currently available for Mac OS X 10.9+ and Windows 7, with a minimum 8GB of RAM recommended; Roon Labs says that iOS and Android tablet apps are coming.

Before downloading the software from www.roonlabs.com, the new user buys a one-year (\$119) or lifetime (\$499) subscription, or else signs up for a 14-day free trial, which also requires the user to submit credit-card information. I've seen some grumbling about Roon Labs requiring a credit card before starting the free trial, but I think you'll easily be able to decide if you like Roon within two weeks. There's also been some grumbling about the price, but prospective users must bear in mind that they're paying for metadata—more about this below—which is no trivial part of the Roon system.

Roon lets you set up multiple endpoints—any Roon-compatible playback

device, whether it's a compatible computer or audio hardware from a Roon partnering manufacturer—in order to enjoy multiple unique music streams or zones. But the Roon license is assigned to one piece of hardware at a time, rather than to one person, so one of those endpoints must be designated as the host. You can mix Mac and Windows computers (I did), but you must make sure that whatever machine holds the license will always be running and connected—otherwise, the whole thing collapses. If you like to have your music collection with you when you travel, assigning the Roon license to a laptop may be the best choice, but bear in mind: When you and that laptop leave your network, the endpoints left at home will no longer function—unless, of course, you buy a separate subscription for at least one of them. Roon says they're thinking about how to deal with this in the future; for now, one subscription enables the working of one network at a time.

Setting up Roon

I set up Roon v.1.0 (build 29) on my

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—John Atkinson, *Stereophile*, September 2015

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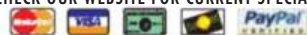
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MacBook, which is on a network with a Western Digital 2TB NAS containing some 4000 albums. Once downloaded, Roon presented me with an interactive menu, allowing me to add music libraries from multiple sources on my computer and network. I added to my Roon installation the Western Digital NAS plus the few albums I had in an iTunes directory, and designated the former as a watched drive: Roon continued to scan it for any newly added albums, which it then added to my collection.

To test Roon's metadata services, I exported from my Sooloos system to my NAS several thousand albums with no metadata attached, other than basic sorting information. When Roon started up the first time, it scanned those files; within a few hours, my installation was filled with photos and artist info.

Although not perfect, the results were nothing short of amazing. I'd say Roon got it about 90% right for my collection, and although there were errors, omissions, and errant tracks, Roon Labs claims that the system's performance will improve as their metadata service gets smarter.² That said, considering what I threw at Roon—I have a lot of obscure music—the results were very impressive. And Roon continues to groom my collection: something I notice every once in a while, when new album artwork and liner notes show up in my system.

And the quality of the metadata is matched by the quality of Roon's infographics. Sometimes, in the design of a user interface, the greatest distinctions are a matter of taste—be it the taste of the developer who decides what to show you and when, or the taste of the designer who chooses the typefaces and typestyles, and the sizes and locations of various elements. When the right choices have been made, everything feels effortless—and that was the first thing I noticed about Roon: how good it looks, and how natural it feels.

It's all about the metadata

It's clear from the start that Roon is built on the foundation of user experience established almost a decade ago by Sooloos—and that's a great thing. Once your files are scanned, you can organize your collection by Albums, Artists, Tracks, Composers, and Works. In Album view, for example, you can sort albums by Artist, Most Played, Date Added, Date (released), and Album Title. In Artist view, you see a grid of artist photos; click on one and you're presented with a larger image and a short bio, upcoming concerts, Top Tracks, Main Albums, and the names of musicians or groups whom this artist Influenced, Followed, Collaborated With, is Associated With, or is Similar To. Links can take you to the artist's website, Wikipedia entry, or Facebook page. These features are arranged in a series of brilliantly organized layers: As you scroll down the page, you get deeper and deeper into their connections to the rest of your collection.



Roon's "Artist" view offers a wealth of information.

The first thing I noticed about Roon: how good it looks, and how natural it feels.

The categories for Composers and Works are, of course, especially useful for classical music: Roon's ability to handle metadata for classical

tracks, though imperfect, represents an improvement over previously available playback software. For example, although you cannot arrange a classical collection by conductor—a category that doesn't apply to most albums—if you click on a conductor's name within an album's metadata, you will then see other albums that include

that conductor, and you can use Roon's Search function to locate other recordings based on that or any other metadata, including but not limited to date, period, form, and so forth. (As Roon Labs puts it, "Composers who die will show death dates, and artists will have updated photos as they age. Reviews will rewrite themselves to stay relevant over the years, as will the relationships between artists and their collaborative efforts.")

Links are embedded everywhere. Select an Artist and you are provided links to backing-group members who were involved with the making of other albums in your collection. Selecting Tracks gives you links to other versions of the same song, or to the songwriters themselves: In a step beyond the Sooloos system, metadata in Roon is track-level metadata, whereby unique data such as song authorship is linked to each individual track. For example, while listening to a David Crosby track, Roon linked me to the Byrds. When I then looked at one of their albums, under a song written by Carole King was a link to other artists in my library who'd covered that song. And it just kept going: I could wander my library for hours and never end up where I'd expected to be.

Other features: You can tag anything to create your own collections; bookmark information sources you've visited; create playlists; and explore the history of what you've played in the past. Lyrics are included, if available from a metadata service (Roon found lyrics for about half of my tracks), and you can denote as Favorite anything you like.

Roon incorporates a couple of browsing modes: Instead of picking music for yourself, Roon can curate your collection into Genres for further exploration, or into Discover mode, in which the system compiles an ever-changing custom "magazine" of suggestions, with inviting graphics and annotations. When I got stuck for ideas as to what to audition, I found this a great place to begin.

² Roon Labs says that the user will be able to edit errors, and that any grooming done by the user will be stored separately in the database—thus Roon can continually update the underlying data without interfering with user edits. A user-generated metadata service is also on the drawing board, so users will be able to perfect the data on tap and share corrections.

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And once you start somewhere, Roon can keep the show going until you pull the plug. The Radio feature uses metadata to create, in the words of Roon Labs, a “personalized station,” in a manner similar to Pandora Radio’s automated music-recommendation engine. To get started, you simply pick one or more tracks, then press the Radio button: Roon moves you around related music with a curated stream.

Sound quality

These days, I find that most music-playing apps sound so alike, the differences aren’t worth sweating. It didn’t

Prospective users must bear in mind that they’re paying for metadata, which is no trivial part of the Roon system.

used to be this way, but it is now: When I’ve properly set up Amarra, Audirvana, JRiver, Sooloos, VLC, etc., on my Mac and compared them through the same DAC, I’ve been hard-pressed to hear meaningful differences. Changing a DAC’s filter setting has a greater influence on sound. (Audirvana and JRiver partisans: Have at it in the comments section when this review appears on Stereophile.com!)

Nonetheless, I connected my Roon laptop to my main system via USB and, using the same albums as in my Sooloos collection, listened intently. I could hear no differences in sound quality, good, bad, or indeterminate. Via S/PDIF, Sooloos doesn’t support DSD, so I couldn’t use that file format as a basis of comparison. But in comparisons of PCM files of CD resolution or higher, up to 24-bit/96kHz, and with the Sooloos and Roon systems using the same DAC, nothing stood out. That said, changing to a different DAC did change the sounds of both . . . but that’s a different review.

Tidal and Roon

For \$19.99/month, Tidal provides streaming service at CD resolution of a growing library of songs that, at time of writing, numbered 25 million. Integration of Tidal with Roon was fairly seamless, although I encountered some metadata quirks that, presumably, Roon will address in updates.

If you don’t already have a large library of music, Tidal can supply you with an instant deep catalog. When setting up Tidal, you can have the service populate your Roon library with a collection of Essentials: 100–200 albums for each genre you choose. You can then add more Tidal albums over time, or explore new music and build up a great collection (as long as you continue to pay Tidal’s monthly fee). If you mix Tidal’s albums with your own,

ASSOCIATED EQUIPMENT

Digital Sources Apple MacBook Pro computer (2.66GHz Intel Core 2 Duo, 8GB RAM, 512GB SSD) running OS 10.10.3, Amarra Computer Music Player, Audirvana Plus, iTunes, JRiver Media Center (v.19.0), Reaper, Songbird, VLC, XLD. Also used, to check compatibility: Android tablet, Apple Mac mini, Intel NUC (detailed in review), Sony laptop running Windows 7; Apple iPad Air, iPod Touch 1G, iPhone 6; Meridian Sooloos Digital Media System (Control 15, QNAP TS-669 Pro NAS); Oppo BDP-103 universal BD player; Western Digital 2TB NAS drive.

Digital Processors AudioQuest DragonFly USB, Auralic Vega, Ayre Acoustics QB-9, Benchmark DAC1 USB & DAC2 HGC, Chord Hugo TT, Cambridge Audio DacMagic XS, Rega

Research DAC-R.

Preamplifier Marantz AV7005 (in Pure Direct Mode).

Power Amplifiers Classé CAM 350 monoblocks (2).

Loudspeakers MartinLogan Prodigy & BalancedForce 212 subwoofers (2). Desktop & recording monitoring system: Emotiva 5 speakers, Velodyne Servo-F subwoofer.

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a small Tidal logo appears in the metadata of the former, to indicate which are which. Another bonus: Like Sooloos, Roon makes navigating Tidal far easier than does Tidal's own app. If you're already a Tidal fan, I believe you'll find Roon a better way to sort and play tracks.

Touch Me

So much for mousing around. I was ready to see if Roon could jump to a touchscreen, giving it a more equal footing with the Sooloos: Even though Roon doesn't yet officially support touchscreen hardware, it has been done.

And I had to try. I researched new, inexpensive touchscreens until I found, among others, one that would work with my Mac and Windows machines: a 23" Acer T232HL (\$300 on Amazon). To connect it to my MacBook Pro, I picked up an HDMI-to-Lightning adapter (\$7).

Touchscreens require two connections to the host computer: an HDMI cable with video, and a USB cable to carry the movement and click info. Though my research indicated that I'd need some drivers for my Mac, when I hooked up the Acer to my OS X 10.10.3 Yosemite laptop, it worked right out of the box—kind of. It was a little choppy and not very intuitive: Tapping, dragging, and basic scrolling didn't work well at all, though the cursor did follow my finger around.

And that's where drivers come in. Two are commonly available right now: Touch-Base (\$171) and Dawkeys (\$150, aimed mostly at the pro-recording industry). I downloaded Touch-Base, ran it in demo mode, and the touchscreen function began working right away. I then downloaded Roon onto an older Mac mini belonging to my housemate, Corrina, and connected it to the touchscreen—and that, too, worked great.

I then invited Corrina's brother, Terrence, to come by with his Sony laptop, which runs Windows 7 Pro (with built-in touchscreen drivers). Once set up, the Sony worked just like the Mac. In fact, the Sony was a little better when it came to onscreen keyboards and more complicated clicking and scrolling.

Terrence was so impressed that he offered to take the touchscreen off my hands when I was done with it. He then found an online post from Roon Labs, recommending Intel's NUC series of compact computers. After a bit of research, Terrence chose the Intel NUC NUC5i5RYH with Intel Core i5 Processor and 2.5" drive support (\$372 on Amazon). He added a Transcend 64GB solid-state drive (\$47), 8GB of Crucial RAM (\$49), and an external 1TB NAS.

Not including the NAS, Terrence's entire system, with touchscreen, computer, and lifetime Roon license, came to \$1438. This compares very favorably with the Sooloos Control 15—which adds a larger internal drive and a transport for ripping CDs—for \$7500. To be fair, the Sooloos is a purpose-built device that is much easier to set up and use, because it does only two things: store and play your collection.

Terrence and I loved the Acer-NUC combo, which can fold down to almost flat on the table, or, with a slight tug, sit up straight. Drawbacks include a glossy, reflective screen that shows fingerprints, and a sensitive power button at bottom right that's too easily hit by mistake. At first, Terrence was concerned by reports of under-load noise from the NUC's fan, but that hasn't yet been a problem when running Roon (and fanless enclosures for NUCs are available). Also, at this point, Roon is dependent on the OS's onscreen keyboard, so a wireless keyboard is helpful. I assume that Roon will even-



Behind the scenes:
An Acer touchscreen was pressed into service for one Roon-friendly system.

Roon is a tour de force of programming, design, and metadata mining.

tually include an onscreen keyboard that functions similarly to the Sooloos's handy version.

Terrence's takeaway, after getting his system settled: "I've had in my mind what I've wanted all these years, and it turns out I was waiting for Roon."

One more note

As I was finishing up this review, Meridian announced that they were going to make an "enhanced" version of their Sooloos software available for free to run on a system similar to what Terrence had just set up. The catch is you'll probably still need to buy a Meridian "Core" in some form to get it to output a digital stream.

Go to Your Roon

I suppose that, in this over-apped world, it's easy to take good software for granted. But after a couple of months with Roon, I still marvel at how it works. Roon is a tour de force of programming, design, and metadata mining, clearly built on the Sooloos system—which, in turn, is based on a thorough understanding of human behavior and how we relate to music. Roon is like a tireless, well-informed musical tour guide, pointing out interesting tidbits before moving you on to the next attraction. It's endlessly entertaining.

If you're thinking of putting together your first computer audio system, start with Roon and don't look back. If you take your music seriously but you're already entrenched with a different computer-audio system, give Roon a spin. I've still got my Sooloos up and running, and it satisfies me for now, but I'm watching Roon like a hawk. If I were starting today, there's no doubt Roon would be my first choice, for both features and price.

As for the latter: When I consider the enormous contribution made to the user experience by top-notch metadata—which is not cheap to come by—I can only conclude that Roon is a bargain. A lifetime price of \$499 is a sweet deal—assuming, of course, that Roon can stick around for at least five years.

In any event, music lovers and audiophiles are lucky to have Roon right here, right now. Check it out. ■

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FOLLOW-UP

BY JOHN ATKINSON

THIS ISSUE: Bel Canto's Black amplification system gets a second listen.

Bel Canto Design Black amplification system

"You don't know what you've got till it's gone," sang the young Joni Mitchell, but she was wrong. When I packed up the Ayre Acoustics KX-R Twenty preamplifier and pair of MX-R Twenty monoblocks, after having reviewed the latter for our August issue,¹ I was well aware that this was the best amplification system I had experienced. The question was, how was I to replace them? I had some new amplifiers on deck for review, but as I still had in-house Bel Canto Design's three-piece Black system, which Michael Fremer very favorably reviewed in July,² I set up the Black in place of the Ayres, driving the GamuT RS7 speakers I had reviewed for the September issue.³

To place into context these Follow-Up comments: The Black system costs \$50,000 and doesn't need a D/A processor, being able to accept both digital and analog inputs. To match the Black's capabilities with comparable Ayre electronics would cost \$27,500 for the KX-R Twenty, \$29,500/pair for the MX-R Twentys, and \$3250 for Ayre's QB-9 DSD DAC, for a system price of \$60,250. The Ayre system also needs cables between DAC, preamp, and power amps; the Bel Canto system's ASC1 box—which is the Black's preamplifier/DAC unit—sends digital data to the two MPS1 power-amp boxes via ST-optical links that are included in the price.

The MPS1 uses a custom version of Bruno Putzeys's Hypex Ncore class-D output module. I had already been impressed by a somewhat different version of this module in June 2014, when I reviewed MBL's Corona C15 monoblock amplifier.⁴ After the Black components had been powered up a day or so, I settled down in my chair for some serious listening, using their apodizing Filter 2 setting and a USB connection from my Mac mini.

Two things struck me immediately. First was how much the Bel Canto system's overall sound differed from the Ayres' (more on this later). Second was the impact of the low frequencies. The bass drum that punctuates the lurchingly rhythmic section just before the 7:00-minute mark in Elgar's overture *In the South (Alassio)*, with Alexander Gibson conducting the Scottish National Orchestra (ALAC file ripped from CD, Musical Heritage Society MHS 11052K), was superbly well defined but had plentiful weight. And when the organ's bass pedals enter at the climax of the preceding work on this album, Elgar's overture *Cockaigne ("In London Town")*, my room was filled with clean, powerful, descending low-frequency quarter notes that amply supported the musical message.

This early DDD CD, recorded by Chandos in 1982, has a rather threadbare balance overall, especially in the violins. But when this recording was decoded and amplified by the Bel Canto Black, I found it easy to disregard the digital

artifacts in favor of the vast sweep of sound the system produced. The orchestral image was wide and deep, with individual instruments superbly well defined. In his review, Michael Fremer noted that "The Black's re-creation from digital sources of three-dimensional imaging and soundstaging was the most intense and compelling I've heard, with



In the old phrase, the Black system is a true "power DAC"!

well-carved images presented against 'black' backdrops." I can't say it any better myself.

Bel Canto's John Stronczer had told me that he feels that the Black gives the best sound quality when used as a network-connected device. Once I was satisfied that I was familiar with the Black's sonic character via USB, I connected the ASC1 to our home network using an AudioQuest Vodka Ethernet cable. I then downloaded Bel Canto's Black app to my iPad Mini, which duplicates the remote control's functions via Bluetooth. For a Mac to get the best sound quality via an Ethernet connection, Stronczer recommends JRiver Media Center as a UPnP server. However, using JRMC 19 on my Mac mini, I couldn't hear any significant difference between that and the USB connection.

I had a couple of operational difficulties with the Black. First, whether I was using my i7 Mac mini or the Antipodes DX as the data source, the ASC1 proved fussy about USB-cable quality when playing files with sample rates greater than 48kHz. A 3m length of Belkin Gold USB cable, which

1 See www.stereophile.com/content/ayre-acoustics-mx-r-twenty-monoblock-power-amplifier.

2 See www.stereophile.com/content/bel-canto-design-black-amplification-system. The Black ASC1 costs \$20,000, the Black MPS1 \$15,000 each. System price: \$50,000. Bel Canto Design, Ltd., 221 First Street N., Suite 300, Minneapolis, MN 55401. Tel: (612) 317-4550. Fax: (612) 359-9358. Web: www.belcantoblack.com.

3 For full system details, see my review of the Antipodes DX music server elsewhere in this issue.

4 See www.stereophile.com/content/mbi-corona-c15-monoblock-power-amplifier.

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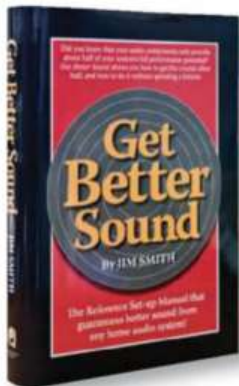
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Best regards,

Jim Smith

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had been problem-free with other USB D/A processors, gave spits and drop-outs with the ASC1. An AudioQuest Coffee USB cable proved problem-free with sample rates up to 192kHz—but I had this cable only in a 1.5m length: The fact that the AudioQuest was shorter may have been significant.

Second, when preparing the measurements section that accompanied our July review, I had inadvertently driven the MPS1 monoblocks fully into clipping for a few seconds, before I could switch off the Audio Precision's analog-signal generator. This was because I hadn't realized that a single push on the front-panel power button merely turns off the LED, but does not put the amplifier into Standby—for which the button must be pushed and held down for three seconds: I'd only pressed the buttons long enough for the LEDs to go dark. Then, when I loaded a new test procedure, I drastically overdrove the MPS1s—which were *not* in standby, and emitted nasty mechanical buzzing sounds. As you can see in the measurements,⁵ when I subsequently tried to measure the maximum power output, the MPS1's protection circuit operated about 3dB below the specified maximum.

When I asked Stronczer if this had been a result of the abuse the amplifier had suffered, he said he thought not. However, when I listened to the Black, I found that, after 30 minutes or so of driving the GamuT RS7 speakers with consistently loud music, and with the volume control set to "86," one of the two MPS1 units that I had tested (serial no. MPS36134) turned itself off. The GamuT is relatively difficult to drive—its impedance remains below 3 ohms for the entire upper bass, a region where music has a lot of energy—but even so, I suspected that the protection circuit of this sample was being triggered prematurely.

Stronczer had suggested that I repeat the high-power testing using a digital source driving the ASC1, which would better represent the Black's actual performance as an integrated system. Therefore, after I finished my listening, I repeated some of the testing on the other MPS1 unit (serial no. MPS09134) using the Audio Precision SYS2722's digital TosLink output connected to the ASC1.

Fig.1 is taken from the original review. It plots the THD+noise percentage against output power into 8 ohms, driving serial no. MPS36134 from its balanced analog input. You can see that the trace cuts off at 150W, due to the operation of the amplifier's protection circuit. By contrast, fig.2 repeats the measurement using a digital input signal sent to the ASC1 with its volume control set to "100." Not only does the amplifier now clip (defined as 1% THD+N) at 375W into 8 ohms (25.75dBW), which comfortably exceeds the specified power of 300W (24.8dBW), but the level of THD+N at low powers is significantly lower than in fig.1. Repeating the measurement into 4 ohms gave the trace in fig.3. Into 4 ohms, the Black clips at no less than 730W (25.6dBW), and into 2 ohms it delivers close to the specified 1200W (24.8dBW)! In the old phrase, the Black system is a true "power DAC"!

Driven by a digital source, the Bel Canto Black both more than met its power specification and offered the lowest level of noise and distortion at normal powers. However, as these measurements suggest that the system will clip at a level of around -7dBFS with the volume control set to its maximum, keeping the volume at "93" or lower will ensure that the amplifier will not clip on instantaneous peaks.

I wrote earlier how different the Bel Cantos system's sound quality

was from that of the Ayre electronics. The Ayre combo had a robust overall sound—before being broken in, its sound was a little *too* robust—with a rhythmically coherent character that emphasized musical values. With every recording I played, the Ayres got the overall musical picture right. By contrast, the Black presented individual audio objects within the soundstage with superb detail, but those objects were not quite as well integrated into the whole as they were with the Ayre.

In my complex recording of the Minnesotan male-voice choir Cantus performing Peter Hamelin's setting of "Casey at the Bat," from *Cantus* (ALAC files from CD, Cantus CTS-1207⁶), the Black presented every detail—the full choir, a barbershop trio, a solo singer, crowd noises, the dialog between the umpire and Casey, the sounds of bat hitting ball and ball hitting glove, birds singing in the trees, a tolling bell—within its clearly identifiable acoustic. (I had recorded the work both in the supportive acoustic of the Washington Pavilion, in Sioux Falls, South Dakota, and outdoors, in a field in Goshen, Indiana.) The Ayre system was not quite as superb at presenting the tiniest recorded details, with a soundstage that was not quite as distant as it was with the Bel Canto. But despite my familiarity with this recording, the experience of listening to it through Ayre's QB-9, KX-R Twenty, and MX-R Twentys was a little more like the first time I heard Erick Lichte's and my final mix, back in 2007.

If the Ayre system was more simpatico with the heart, the Bel Canto Black appealed more to the head. I could readily live with either—if I had this kind of money!—John Atkinson ■

5 See www.stereophile.com/content/bel-canto-design-black-amplification-system-measurements.

6 See www.stereophile.com/musicrecordings/new_cantus_cd_from_john_atkinson/index.html.

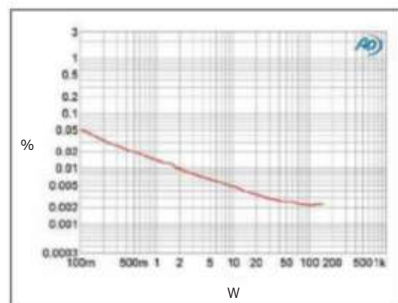


Fig.1 Bel Canto Black, MPS1 analog input, distortion (%) vs 1kHz continuous output power into 8 ohms.

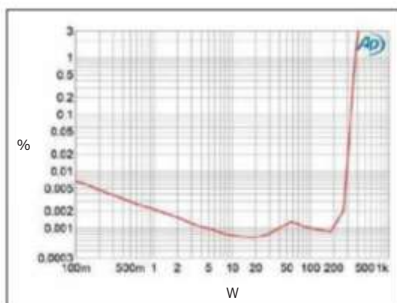


Fig.2 Bel Canto Black, ASC1 digital input, distortion (%) vs 1kHz continuous output power into 8 ohms.

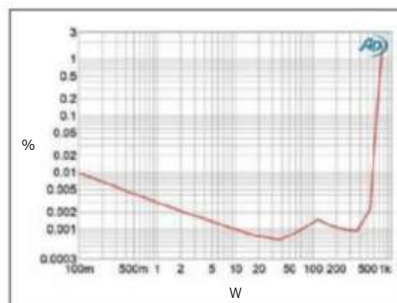


Fig.3 Bel Canto Black, ASC1 digital input, distortion (%) vs 1kHz continuous output power into 4 ohms.



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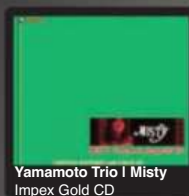
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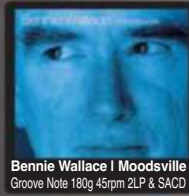
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RECORD REVIEWS

This razzle-dazzle release is remarkable on several levels, and I wouldn't be surprised if it converted harpsichord haters to harpsichord hipsters. Iranian-American harpsichordist Mahan Esfahani, stealing a quote from T.S. Eliot about the relevance—or irrelevance—of time and (while he's at it) the harpsichord, here presents the instrument in works written for it in the 17th and 18th centuries, interspersed with pieces by two 20th-century composers. (The album's title references these lines from Eliot's *Four Quartets*: "Time present and time past / Are both perhaps present in time future, / And time future contained in time past.") Esfahani's argument holds water: bringing an "olde" instrument into the present with unflinchingly contemporary music turns this debut solo-recital disc into a splendid event—and, yes, proves that baroque music, with its repeating patterns, can make a fine pairing with minimalism. It's all far less jarring than you might think, and does provoke thoughts about the slippage of time.

The word *folia* or *folia*, which recurs in the titles of the baroque pieces, means "madness" or "folly," and also refers to an anonymous, simple, catchy, minor-key melody dating from the 16th century that has been used by more than 150 composers since, including Vivaldi, Handel, J.S. Bach, Liszt, and Rachmaninoff. It's now best known from Arangelo Corelli's Violin Sonata *La Follia*, Op.5 No.12. (Pre-baroque church vocal music also frequently sampled well-known, anonymous tunes, the most famous being "L'homme armé.") There's a good chance that the little melody got its name because it became such a fad or phenomenon—a folly—its eight notes being impossible to forget and easy to riff on.

The disc opens with a lively performance of Scarlatti's "La Folia" variations, whose perky busyness jams, almost without pause, right into the

EDITOR'S PICK RECORDING OF THE MONTH



MAHAN ESFAHANI *Time Present and Time Past*

C.P.E. Bach: 12 Variations on "Les Folies d'Espagne." J.S. Bach: Harpsichord Concerto in d, BWV 1052. Geminiani: Concerto Grosso in d (after Corelli). Górecki: Harpsichord Concerto. Reich: Piano Phase for Two Pianos (harpsichord version: Esfahani). A. Scarlatti: Variations on "La Folia."
Mahan Esfahani, harpsichord; Concerto Köln
Archiv Produktion 4794481 (CD). 2015.
Christoph Classen, prod.; Michael Morawietz, eng. DDD. TT: 73:45r

PERFORMANCE ★★★★★
SONICS ★★★★★

Górecki concerto's first movement, which features a dark underbelly of strings below the harpsichord's almost industrial churning. The second movement begins with an innocent enough tune that turns into a wildly dissonant perpetual-motion machine, violins swirling madly above the agitated keyboard. It's almost cruelly minimalistic, and it's riveting—all 8½ minutes of it. It ends unexpectedly—one might almost accuse Górecki of having a sense of humor—and Esfahani's playing is a whirlwind of vitality and exactitude: a hard combination to find.

Back on earth, C.P.E. Bach's seemingly simple work takes us through the entire range of the harpsichord

and, like the good variations they are, keep the listener guessing—yet another example of this underheard composer's brilliance. Esfahani's fast fingers dance about, catching the wryness and temper of each variation in just over seven minutes as he and C.P.E. take "La Follia" through its changes. Speaking of brilliance—this time in programming—the C.P.E. ends on the same note, D-flat, that begins the next piece: Geminiani's familiar Concerto Grosso in d, after Corelli. Here the Concerto Köln shines brightly, the melody leaping from harpsichord to entire band and back, with star turns along the way for solo violin and cello.

Steve Reich composed *Piano Phase* for Two Pianos in 1967, in an early experiment in duplicate performances of the same notes (in this case, just 12): the pianists were to start together, but one is directed to play slightly faster, and soon the piece becomes something else entirely, its harmonies and textures changing, clashing, then becoming consonant; eventually, the two players come together again. The rippling effect is like a fast baroque cadenza that comes and goes. The two pianists—Esfahani overdubs himself on harpsichord—must play with an almost punishing precision. Here, the rhythm never falters, making us wonder about time and what a shift of one beat can do to a composition.

Oddly, the least successful piece is the last: J.S. Bach's Harpsichord Concerto in d, BWV 1052. It's driven too hard—the great Concerto Köln seem to be on a different page from the soloist, their playing both too cumbersome and not as loose as Esfahani's. And I'm not certain that Esfahani's choice of Brahms's cadenza for the last movement, which is lumpier than anything around it, was a good choice. Esfahani himself conducts, so the blame must be local. But this is a small complaint—this CD is intelligent, thought-provoking, musically fascinating, and superbly performed.—Robert Levine ■

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SING WITH THE VOICE OF MELODY
Works by Byrd, Clemens non Papa, de Ceballos, Gibbons, Gombert, McCabe, Sheppard, Tallis, Tompkins, Victoria

Harmonia Mundi 807650 (SACD/CD). 2015. Robina G. Young, Brad Michel, engs. DDD. TT: 72:41

PERFORMANCE ★★★★★

SONICS ★★★★★

It's Stile Antico's 10th anniversary, and each of the group's 12 singers has chosen his or her favorite piece from their catalog of recordings for this "favorites" compilation. The wonderfully varied results show off their supreme gifts.

The difficult, 12-voice "O praise the Lord," by Thomas Tomkins, opens the CD, its busy polyphony impeccably tuned and so expressively sung that it's easy to follow, and it's followed by Clemens non Papa's smooth-flowing, rock-solid, easily harmonized "Ego flos campi"—a perfect example of how well-thought-out this program is. There are treats galore: Thomas Tallis's brief "In pace in idipsum" varies plainchant, sung by the sopranos, with rich, complex polyphony from the nine men's voices offering the peaceful text like velvet. The popular text of Psalm 47, "O clap your hands," here set by Orlando Gibbons (there are also versions by John Rutter and Ralph Vaughan Williams), is a joy, and contrasts well with the calm sadness of Tomás Luis de Victoria's "O vos omnes," another dark-grained drama, which rarely rises above a whisper.

Gombert's "Magnificat primi toni" is a rich piece in which all voices are given equal weight, and here as in the Tallis, plainchant is used to break up complexities and give the ears a rest. The single contemporary work, "Woefully Arrayed," by John McCabe, is a meditation on Judas's betrayal; it's cutting dissonant, the opening text presented as fierce stabbings. McCabe knew his renaissance music well, but puts an entirely new stamp on the text.

Sonics and performances are impeccable.—Robert Levine

ROCK/POP



BROTHER DEGE
Scorched Earth Policy: Deluxe Edition

Psyousthern Media 002 (CD). 2015. Tony Daigle, Dege Legg, prods., engs. ADD? TT: 41:00

PERFORMANCE ★★★★★

SONICS ★★★★★

Dege Legg surfaced in the mid-1990s, fronting swampadelic southern rockers Santeria, who lasted about a decade until Legg went solo, sometimes touring as a member of fellow Louisianan C.C. Adcock's band. In 2010 Legg remade himself as Brother Dege, and by the release of the critically acclaimed *How to Kill a Horse* (2013) he was regularly notching comparisons to Chris Whitley, J.J. Grey & Mofro, and Rainer Patek for his atmospheric yet earthy style of resonator guitar, and to classic bluesmen for the way his haunted howl and sensual croon could convey an impressive range of emotions.

Originally a digital-only collection of demos and field recordings, *Scorched Earth Policy* is now a *Deluxe Edition*, Dege having ditched some of the rougher material to construct a solid 12-songer. It's no odds'n'sods collection of leftovers, given such gems as bluesy stomper "Pay No Mind" and spooky, droning "Tower of Babel" (both showcases for Dege's resonator talents), and the irresistibly catchy "Somewhere," which practically cries out for Mark Knopfler to cover it. A six-minute instrumental, "Calabasas," is so searingly cosmic it could pass for *Electric Ladyland*—era Hendrix indulging a slide-guitar fetish. Dege's otherworldly singing is also on display.

The aforementioned atmospheric help lend the album its sonic depth as well as its immediacy, yielding a remarkably three-dimensional soundstage. The instrumental separation is clear, as is Dege's voice, even when double-tracked. Yet it's all in service to a vital, noirish ambiance—as befits an artist who plies his trade from the haunted bayous of southern Louisiana.—Fred Mills



DATURA4
Demon Blues

Alive Naturalsound ALIVE0172 (CD). 2015. Datura4, prods.; Dom Monteleone, Laurie Sinagra, Kenny Watt, engs. AAD? TT: 52:22

PERFORMANCE ★★★★★

SONICS ★★★★★

You'd be forgiven for presuming that a summit meeting of Australia's Dom Mariani and Greg Hitchcock should yield pop nirvana. The former's work with power-pop mavens the Stems, Someloves, and DM3, and the latter's tenure with melodic alterna-rock mainstays You Am I, would signpost exactly that—tuneful, hook-soaked, harmony-strewn nuggets. Check those preconceptions—better yet, chuck 'em! Mariani and Hitchcock are here to make sure you reach for all your old Thin Lizzy, Grand Funk, ZZ Top, and Brownsville Station (!) LPs right after spinning their long-playing debut.

Looking for some straight-up Texas boogie? Get your motor runnin' with the full-tilt title track. Fancy tastes of wah-wah, fuzz, and distortion? "Out with the Tide" serves nicely. A swaggering, finger-snapping homage to Norman Greenbaum's "Spirit in the Sky"? Check out "Another Planet." Maybe a moody, tremolo-laced foray into aquatic/surfy psychedelia? Try extended jam "Love to Burn." It's all here—even, heavens to Baker, a friggin' drum solo ("If Seven Was Eleven"). Now *that's* some '70s worship, bro. *Demon Blues* also has a vintage analog sound—in places, if your thing is hi-def, perhaps a bit muddily so, the bass sometimes overpowering the channel-separated twin guitars and the overdriven lead vocals venturing into the red. That's probably intentional, however.

Dig out your faded bluejean bells, hop in that rusty shag-carpeted boogie van, and crank the 8-track to 11. Don't forget the Ozium air freshener . . .

—Fred Mills



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ANDY J. FOREST
Word Shadows & Ghost Notes

Slang SRO10 (CD). 2015 Andrew "Goat" Gilchrist, prod., eng. DDD? TT: 55:32

PERFORMANCE ★★★★★
SONICS ★★★★★

Over the course of 21 albums, Andy J. Forest has proven to be a shrewd bandleader and one of the top harmonica players in the Crescent City. The gangly, deep-voiced frontman moonlighted as the harp-wielding sidekick to Chaz Leary in the Washboard Chaz Blues Band. But Forest's secret weapon has always been his writing. It's tough to be a blues singer without original material, and Forest is one of the great observers of and commenters on life in New Orleans, with its mysterious and miraculous ups and downs.

A couple years back, Forest had a solo gig at the Spotted Cat, where twice weekly he worked on new material, and played guitar in public for the first time. He turns out to be a superior guitarist—no glib technician, but a skillful self-accompanist who frames and comments on his lyrics with clever asides and sturdy rhythms. As Forest rolls through 22 New Orleans tales in less than 56 minutes, it feels like listening to an old Mississippi Fred McDowell set. There are fresh new songs, like "Bulletproof Bible" and "Fine Day for a Funeral." Federal Flood favorites like "Breach in the Levee," "Let 'Em Die," and "Trail-erless Man" get new, stripped-down arrangements that really complement the lyrics. Forest is comfortable writing songs about typical New Orleans encounters, as in "Bartender Friend" and "\$10 Bill." But it's his songs of tenderness—remembering a fallen friend ("Last Goodbye"), expressing his love for his daughter ("Ella Dora"), or delivering a heartfelt tribute to his Ninth Ward neighborhood ("Bywater")—that plumb the depths of his feeling for the blues. —John Swenson



GALACTIC
Into the Deep

Provogue PRO74602US (CD). 2015. Robert Mercurio, Ben Ellman, prods., engs. DDD. TT: 42:52

PERFORMANCE ★★★★★
SONICS ★★★★★

No band has done a better job of moving New Orleans music into the 21st century than Galactic. Through the addition of numerous new voices, the band's core sound has evolved into one of the most progressive dance-music strategies, an evolution that has taken Galactic from old-school funk through the jam-band ethos, an experiment with hip-hop, and, finally, its current phase of electronic music. This is one of the few bands that could command a crowd with equal authority at a jamfest or an EDM marathon.

Into the Deep manifests these identities while retaining a vital center. The vision can be traced to the album's brilliant in-house producers, saxophonist Ben Ellman and bassist Robert Mercurio. Everything turns on the interplay between Mercurio and the great drummer Stanton Moore, whose rhythmic foundation allows for widescreen arrangements. Galactic started out rooted in Go-Go and the Meters, but now sounds like a new-age Parliament/Funkadelic: a three-ring musical circus that keeps shifting the audience's point of view while never straying from the relentless groove that holds it together. One after another, featured attractions take the spotlight—Corey Henry, J.J. Grey, Macy Gray, Mavis Staples, Brushy One String—then leave after their star turn, as Mercurio's ringmaster bass lines keep the listener's attention properly focused on the big picture.

The album's killer cut is "Dolla Diva," an elastic dance rhythm powered by terrific vocals from David Shaw (Revivalists) and the incredible Maggie Koerner, who's successfully fronted Galactic on tour. —John Swenson



ROYAL JESTERS
English Oldies

Numero 062 (LP). 1960s/2015. Rob Sevier, Ken Shipley, prods.; R. Sevier, Blake Rhein, Rae Cabello, Chris Varelas, research, compilation; Jeff Lipton, Maria Rice, mastering. AAD? TT: 76:23

PERFORMANCE ★★★★★
SONICS ★★★★★ TO ★★★★★

Reissue is too weak a word for the high-art compilations of obscure music continuing to appear from the Chicago-based Numero Group. Amid terrific new compilations focusing on the crank-phone-call comedy of WFMU's Scharpling and Wurster, the acid folk of Midwest band White Eyes, and the singles of soulster Syl Johnson, comes *English Oldies*, a term given to 1960s Anglo pop music played by Spanish-language stations in the Southwest US. The journey documented here is that of the Royal Jesters, a San Antonio Chicano rock/doo-wop/soul band. Though they began in the early '60s as a suave vocal-harmony group with horns, nailing such numbers as Trade Martin's "Take Me for a Little While" (later memorably covered by Vanilla Fudge, Dusty Springfield, and others), by the middle tracks on this disc—the jumpy, funky, dance-track covers of Little Joe Cook's "Meet Me Down in Soulsville" and Marty Sheller's "Afro-Lypso"—the Jesters had formed their own backing band and morphed into a smooth soul act fronted by Oscar Lawson, Henry Hernandez, and others. Mostly though this was catchy vocal pop for glandular youngstas—a San Antonio version of the Young Rascals meets the Temptations, and a fundamental part of the now-revered San Antonio Sound, a scene that produced Doug Sahm's Sir Douglas Quintet. Along with their impeccable taste and infinite patience in assembling scattered source material, Numero's greatest skill may be how well they sonically resurrect scratchy 45s and dodgy tapes, and blend these uncited sources into a vivid if slightly one-dimensional whole. —Robert Baird

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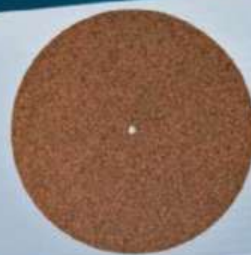
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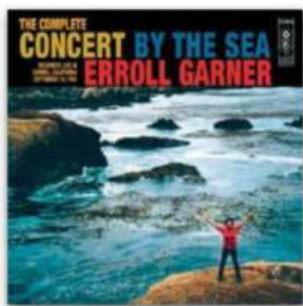
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JAZZ



ERROLL GARNER

The Complete Concert by the Sea

Columbia/Legacy 88875120842 (3 CDs).
1956/2015. George Avakian, orig. prod.; Jim
Meagher, Will Thornbury, orig. engs.; Geri Allen,
Jimmy Lyons, Steve Rosenthal, reissue prods.; Jamie
Howarth, Jessica Thompson, mastering. AAD? TT:
2:38:52

PERFORMANCE ★★★★★
SONICS ★★★★★

The worldly elegance and dignity that Duke Ellington and fellow jazz pianist and composer Erroll Garner brought to concert stages and recordings in the mid- to late 1950s were strangely at odds with the bland postwar conservatism of the day. Dwight D. Eisenhower hadn't yet been reelected on that beautiful September day in 1955 when Garner and his brilliantly understated rhythm section of bassist Eddie Calhoun and drummer Denzil DaCosta Best came to Carmel, California, to play the acoustically excellent Sunset Auditorium, a former church. It turned out to be a performance for the ages.

Long heralded for documenting Garner's pianistic (though inexplicably underappreciated) glory, *Concert by the Sea* has been thankfully blossomed in celebration of the 60th anniversary of its recording. This three-CD set, with 11 previously unreleased performances, is geometrically more substantial than the original 1956 edition (included here in its entirety on disc 3) released in "guaranteed high-fidelity" on Columbia's red-and-black "six-eye" label.

Disc 1 begins with concert promoter Jimmy Lyons's introduction ("You're all going to be thrilled right out of your shoes tonight"), followed by two previously unreleased tracks. The first, a jaunty rendition of Cole Porter's "Night and Day," foreshadows the musical exhilaration that will fill the evening. From the start, Erroll can often be heard humming along, adding to the musical intimacy that permeates this recording, newly restored and remastered at the Magic Shop in New York City using the Plangent Process

for the digital transfer of analog tape. It's as if we have the best seats in the house.

In his wonderfully descriptive liner notes for the 1956 release, original producer George Avakian wrote, "The voice you hear occasionally, in the manner of Toscanini exhorting his musicians, is Erroll, actively conducting with his head, hands, shoulders, and vocal cords." A lovely, introspective take on Rodgers and Hart's "Spring Is Here" follows, Garner gracefully weaving in and out of the melody before tackling the original album opener, "I'll Remember April," with seamless Art Tatum-like flourishes and what Avakian described as Garner's "slightly off-center rock, in which he seems to pluck notes out of the piano instead of depress keys." There is plenty of spontaneous applause throughout the concert, and here, at the 3:15 mark, after a dynamic build, Garner and bassist Calhoun bring it way down with delicate, pulsating interplay. There's a smattering of claps, but most of the audience sits rapt, hanging on each note.

Another poignant example of Garner's singing or *aaaah-ing* along (a trait that later would be associated with Keith Jarrett) comes in Porter's "It's All Right with Me," which, as we now know, closed one of the sets, to jubilant, sustained applause. On the original album, it ended side 1 with a quick fade-out.

Besides the wealth of compositions tackled, by the likes of Sammy Cahn, Johnny Mercer, and the Gershwins, Garner contributes a then-untitled up-beat piece, inspired by Latin rhythms, that became "Mambo Carmel." Early and joyous Latin jazz, 25 years ahead of its time.

Disc 2 opens with promoter Lyons's witty and rambling reintroduction following an intermission, previously unreleased. He talks of how Erroll began "fooling around" on piano about age three, and never had a formal piano lesson. Then, speaking of a new album by Garner and Woody Herman, *Music for Tired Lovers*, which had an offbeat cover photo, he concludes, "I'm pretty sure, in this set, if you enjoy being fractured, please be now fractured by Erroll Garner. *Hmmm... Erroll.*"

The repertoire concept for this concert was, generally, to perform songs that hadn't appeared on Garner's earlier albums for Columbia. And there's no "Misty," a Garner-penned classic he'd co-written the previous

year and that would later be recorded by everyone from Johnny Mathis (a signature song for him), Lloyd Price, and Lesley Gore to "Groove" Holmes, Sarah Vaughan, and Ray Stevens, who had a banjo-driven top-three country hit with it.

Johnny Carson once said, "Erroll Garner is my all-time favorite pianist." Jazz great Ahmad Jamal is quoted in Robin Kelley's incisive liner notes as saying, "Anyone that has not been influenced by Erroll has not been in our field. . . . I'd say he's from the impressionistic school and of the rank of Ravel and Debussy."

"ANYONE THAT HAS NOT BEEN INFLUENCED BY ERROLL HAS NOT BEEN IN OUR FIELD. . . I'D SAY HE'S FROM THE IMPRESSIONISTIC SCHOOL AND OF THE RANK OF RAVEL AND DEBUSSY!"

Disc 3 ends with previously unreleased radio interviews with each band member, recorded immediately after the concert. Jazz scholar Will Thornbury, in introducing Garner, begins by setting the scene "where we've seen one of the happiest concerts in our entire lives, believe me." Amen. Soon after *Concert by the Sea*, Columbia released Garner's *The Most Happy Piano*. But as up as Garner's music is, even more, it's welcoming, dazzling, and passionate. *Concert by the Sea* has long been considered Erroll Garner's finest album and his bestseller. This expanded version adds mightily to the legend—and the perfection.—David Sokol

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CONTINUED FROM PAGE 179

PS Audio's display says it's 24/352.8.

D'oh! In Squeezebox Server's Player Menu, I'd neglected to tell the PS Audio to output DSD over USB. That done, the PS Audio displayed "DSD64 1" and all was well—especially with the images of the violin and piano, which were (dear God, I hate myself for saying this) *palpable*.

I finished my listening by streaming from Tidal the reissue of Roger Waters's *Amused to Death* (16/44.1 FLAC, Columbia). Other than during a surround presentation by Acoustic Sounds and engineer James Guthrie at Princeton University in 2014, I hadn't heard this album in 20 years. It was the best sound I've experienced from Tidal. And, as with the Dylan album, it was as if I were hearing it for the first time. I don't remember *any* of it—not the found sounds, such as the dog barking in track 1 (all placed by QSound far to the left or right of the left or right speakers); not Jeff Beck's wailing guitar punctuation; not the driving force of the rhythm section; not the sheer presence of the voices of Waters, P.P. Arnold, and Marv Albert; not the arena ambience around the power drums; not the clarity of the descending piano motif—having ever sounded so convincing.

I've run out of space to describe the other things the Antipodes DX Reference can do: play files from a NAS drive or USB drive, synchronize with an iTunes library on another computer using the supplied SuperSync app, or, via the MinimServer app, act as a UPnP server to an Ethernet-connected DAC. More on those in a Follow-Up.

Conclusion

My frugal persona wants to say that, at one-eighth the price,

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Power Amplifiers Bel Canto Design Black MPS1, MBL Corona C15 (both monoblocks).

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Cables Digital: AudioQuest Coffee (USB) & Vodka (Ethernet). Interconnect (balanced): AudioQuest Wild. Speaker: Kubala-Sosna Elation! AC: Kubala-Sosna Elation!, manufacturers' own.

Accessories Target TT-5 equipment racks; Ayre Acoustics Myrtle Blocks; ASC Tube Traps, RPG Abffusor panels; Shunyata Research Dark Field cable elevators; Audio Power Industries 116 Mk.II & PE-1 AC line conditioners (hard drive, computers). AC power comes from two dedicated 20A circuits, each just 6' from breaker box.—**John Atkinson**

my plain-Jane Mac mini was fully competitive in sound quality with the Antipodes DX Reference. But it wasn't. My audiophile persona felt that, with the DX, there was a greater sense of ease, of you-know-whatability to the imaging, of involvement with the overall sound. And *that's* what it's all about, even without taking into consideration the DX's ease of setup and use. Highly recommended. I said *highly*. ■

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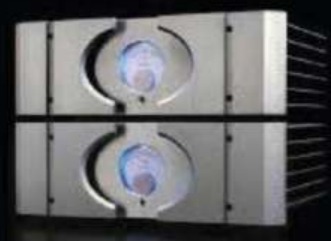
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MANUFACTURERS' COMMENTS

The Bespoke Audio Company

Editor:

We are extremely grateful to Art Dudley and to *Stereophile* for taking the time to audition our preamplifier. We are proud and humbled that, even though ours isn't the kind of product he usually enjoys, Art still took so much care in understanding our approach and wrote so kindly about us.

Of course, we knew Art's preferences didn't match with ours, but if everyone liked the same things, life wouldn't be nearly as much fun!

Harry O'Sullivan

The Bespoke Audio Company

Schiit Audio Mani

Editor:

I would like to extend gratitude and appreciation for Herb Reichert's time and effort requisite to the review. The Mani was a delight for me to design, as well as a recalibration of my direction and focus as an audio designer.

One of the things I had started to lose over the years was the sense that audio is, above all else, a hobby. That means that it is supposed to be fun. I remember attending shows 40 years ago (!), and the hotel hallways were filled with happy, smiling, young audio aficionados—we had to crowd our way into the rooms. I was a young student with a part-time job, and there were many audio products priced within my means. This facilitated my passage into audiophilia. The Mani is priced according to that model.

Now Schiit Audio, as a company, is primarily in the biz of producing products related to headphones, although there is clear crossover into mainstream, speaker-based audio, particularly with our DACs and accessories. This is a biz that brings to mind the audio environment of my youth, with many excited and happy young faces at the headphone portions of the shows. I assumed the Mani was a risk to build for such a market. I am so glad to announce that I was totally wrong! We built a first run of a thousand, prepared for it to be a multiyear supply, but they are just about gone.

The design goals were to build a good-as-many, better-than-most phone stage that we could sell for the price of a couple of good steak dinners. That is exactly what it is. It is good enough to

THIS ISSUE: The Bespoke Audio Company, Schiit Audio, and Bel Canto Design comment on our reviews of their products.

tap your toes to and hum along with and just, in general, have a great time with. It is also just the kind of product that audio needs if it is to survive another generation or so, attracting many new listeners and turning them on to the eccentricities of vinyl.

What it is not, and never will be, is an absolute. Nor is it an intro product on the path to an over-\$100,000-retail, SUV-sized, multi-car-battery-powered, liquid-sodium-cooled, 15Wpc, class-A squared system that can be driven 80 miles off-road in Wyoming, where only those blessed with the most arcane audio knowledge can find the ley-line intersection where it sounds perrrrrrrrrrrrrfect... ah, except for those violins, which are a bit screechy.

Well, no. Those few surviving fellows can be spotted on the higher floors of contemporary audio shows, walking around, constipated expressions on their faces, dreading to return home to imperfect, multi-hundred-thousand-dollar systems and four-song music collections.

I say, let's have some fun, and bring in as many younger folks as possible—a much better legacy for old farts like me.

Mike Moffat

Schütt Audio

Bel Canto Design Black

Editor:

John, we greatly appreciate your efforts in completing the power testing and your listening insights into our Black system. The original design brief for Black was to create a system that ensures that *all* of the information in a recording is accurately conveyed to the loudspeakers. This goal dictated the design choices in this unique integrated audio system. The ability to hear deep into the recording is a hallmark of Black, allowing the original recording to appeal on its merits rather than any sonic elements imparted by the playback electronics. In my experience, discovering the subtle details in recordings creates long-term listening excitement, no matter the medium.

*John Stronczer, Founder, Chief Architect
Bel Canto Design*

LETTERS

CONTINUED FROM PAGE 11

monitoring systems they used, you aren't hearing what they heard anyway. If you are enjoying the music, they did their job. As for those who claim to be "transparent to the master tape" listeners, that is bogus to the core. A master tape doesn't make a sound. You have to have a playback system. All they are doing is claiming that their particular sound preference is how the music ought to sound. I will remain an enthusiast and subscriber, but I might jump right into Kal Robinson's column as soon as the magazine arrives.

—Bob Wortman

New Milford, CT

rwortman2@charter.net

What income inequality?

Editor:

I have been puzzled and annoyed to read so many conflicting opinions in *Stereophile* about the cost of high-end gear. In the August issue (p.124), reader Drew Edmonds seems to think gear is too pricey. However, Robert Schryer's editorial in July (p.3) comments on the "cheapitude" factor, saying, "we're at a historic juncture of quality, price, and options." Back in the June issue (p.37), John Marks seemed to think that there are too few cost-effective systems available.

Do these guys who think gear is too pricey ever read the ads or *Stereophile's* own reviews, which usually include prices? When I decided to plan my high-end system a couple of years ago, I was so pleased to find excellent speakers in the \$3000–\$5000 range, and other superb components at very reasonable prices. I could have spent \$35,000 on a big SUV, but I'm not interested in that. I spent about \$12,000 for everything I need—way cheaper than any new car—and the sound I have is sublime.

From where I sit, which is right in the sweet spot of my new system, it's a buyer's market for high-end gear. And if you have money to burn, you can go for the top end.

—Roy Midyett

—Roy Midyett
ramidyett@ca.rr.com

Missing Words

Editor:

I recently purchased your *Stereophile Editor's Choice Sampler & Test CD*. Where can I find the booklet notes for this CD?

—Name and address withheld by request

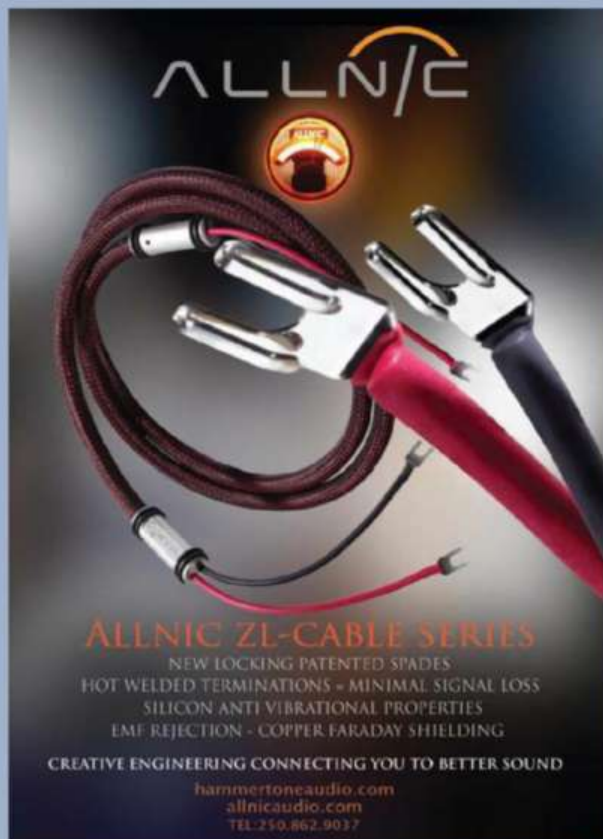
To keep the price of this CD as low as possible, we published the booklet online: www.stereophile.com/musicrecordings/853/index.html. Editor's Choice costs \$9.97 plus S&H and can be purchased from <http://store-badz031c.mybigcommerce.com>. —John Atkinson



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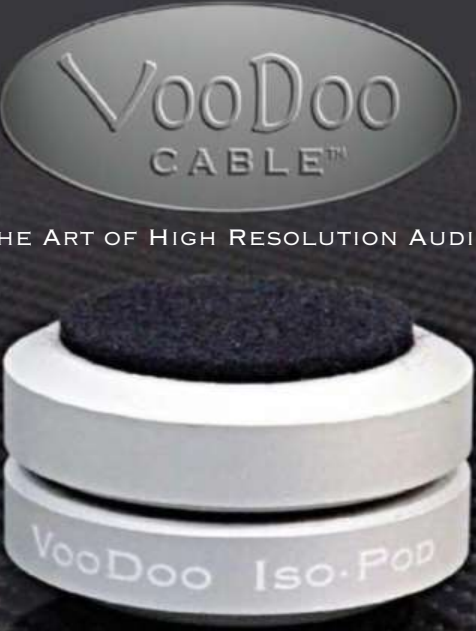
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– *The Absolute Sound*, September, 2014



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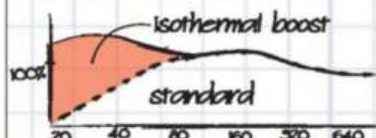
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AURAL ROBERT

BY ROBERT BAIRD

Fabulous Donnie Fritts

In recent years, there's been a rush among documentary filmmakers to chronicle America's great house bands. While *Standing in the Shadows of Motown*, the story of the Funk Brothers, remains far and away the best of the genre, the latest band to be immortalized on film is part of the funky universe of Muscle Shoals, Alabama. While most of the Muscle Shoals notables, including Fame Studios owner Rick Hall, appear in *Muscle Shoals* (2013), there were several obvious absences, none more glaring than that of Donnie Fritts, who's just released *Oh My Goodness*, recorded and produced by John Paul White, formerly of The Civil Wars. It's only the fourth full-length album to bear Fritts's name in a career that began a half century ago when he was still a teenager. Vexed by *Muscle Shoals*, the writer of such hits as "We Had It All" (Dolly Parton, Waylon Jennings) and "Breakfast in Bed" (Dusty Springfield), a laconic and craggy soul fondly known as "Funky Donnie Fritts," nonetheless had to admit that, sometimes, blessings arrive deeply disguised.

"I don't want to go into the film, but I had a few problems with it," Fritts said from his home in Florence, Alabama. "But I'm proud that it brought attention [to Muscle Shoals]—that's my town, you know. And all my buddies were there, Jimmy and David and all those guys. John Paul [White] was in charge of putting the show together for the premiere of that film here, and everybody told him, 'There ain't no way you're gonna get Donnie to do this.' So he calls me, and I couldn't say no to this kid. He's great, so smart, and so I did it, and then I played some songs for him one day after that. So really, the reason this album exists, and John Paul and I got together, is because of that documentary."

A longtime member of Kris Kristofferson's band in the 1970s—a connection that helped him get acting roles in a number of feature films, including *Pat Garrett and Billy the Kid*, *A Star Is*

Born, and *Convoy*—Fritts has, in recent years, felt a little as if someone else is playing the role of Donnie Fritts. On the web, his identity has been confused with that of a similar-looking man of the same name, who has survived a devastating bout with a rare facial cancer.

"I really feel sorry, feel bad for the guy, but one of the best reviews of this album that I've gotten, somebody said, 'He did all this while facing one of the worst cancers that anybody can get.'"

Oh My Goodness was tracked simply and quickly in Muscle Shoals, with White playing acoustic guitar, and Fritts singing and often playing his signature instrument, the Wurliitzer electric piano. Instrumental parts by such younger-generation Muscle Shoals neighbors as Jason Isbell and Amanda Shires, Fritts admirers like the Alabama Shakes' Brittany Howard, and longtime Fritts compatriots such as guitarist Reggie Young, were overdubbed later. Horn parts were provided by members of another local band, St. Paul and the Broken Bones. Another old friend, John Prine, plays acoustic guitar on a version of "Oldest Baby in the World," which he and Fritts co-wrote years ago. "It was so cool. He said, 'You know what? I've never been asked to play on a record before.'"

Besides "Oldest Baby," a number of tracks on *Oh My Goodness* are oft-covered gems from Fritts's songwriting catalog, this time done the way he wanted to hear them. While his voice has become an acquired taste, no one can weave a yarn, particularly if heartbreak is involved, quite like Fritts. Amanda McBroom's song "Errol Flynn" which Fritts says was one of his primary reasons for recording the album, gets a tender, yearning vocal performance. One of his most affecting tales, "Really Gotta Be This Way," which was a hit for Fritts's friend and collaborator the late Arthur Alexander, appears here with violin, viola and harmonies by The Secret Sisters, Laura and Lydia Rogers. Another Fritts nugget here, "Choo Choo Train,"



John Paul White and Donnie Fritts.

a hit many years ago for the Alex Chilton-led Box Tops, was co-written with Muscle Shoals' most unsung hero, Eddie Hinton.

"In his own way, Eddie was a brilliant guy. We got together when he first came to town—that was about '67—and we started writing right after that. We wrote a ton of songs together. "Breakfast in Bed" has been covered a number of times. It was on *Dusty in Memphis* and . . . [long pause, then a guffaw] it was in *Godzilla* this year. It's crazy. I didn't know anything about it until someone told my wife, said, 'Gosh, Donnie has a song in *Godzilla*!' I said, 'What in the hell is she talking about?' But it was in there, you know."

And then a check came in the mail?

"Well, it did, actually, later on. So that was a help, it really was."

Closing with a duet by Fritts and Oldham on the title track, *Oh My Goodness* is a fine surprise from an ace sideman and eloquent songwriter who's never stepped out on his own enough.

"I didn't think I'd get a chance to do it. Seventy-two years old—who's gonna give me a chance to do a record? It's like a miracle." ■

Music critic Robert Baird (RBaird@enthusiastnetwork.com) welcomes a vibrant discourse on music and musicians.



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